UNITED NATIONS

EP

UNEP/EA.1/INF/12

Distr.: General
16 May 2014

English only

United Nations Environment Assembly of the United Nations Environment Programme

United Nations Environment Assembly of the United Nations Environment Programme
First session
Nairobi, 23–27 June 2014
Item 5 and 6 of the provisional agenda*

Policy issues

Follow-up to and implementation of the outcomes of United Nations summits, in particular the United Nations Conference on Sustainable Development, and major intergovernmental meetings of relevance to the United Nations Environment Assembly

Programme of Research on Climate Change Vulnerability, Impacts and Adaptation

Note by the secretariat**

Summary

The present note. to which reference is made in the reports of the Executive Director on the implementation of Governing Council decision 27/2 (UNEP/EA.1/2/Add.1) and on the state of the environment (UNEP/EA.1/4 and Add.1), provides an overview of the progress made in developing the global Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA) since the twenty-seventh and first universal session of the Governing Council/Global Ministerial Environment Forum of the United Nations Environment Programme.

It is concluded that measurable progress has been made by PROVIA during the reporting period. Continuous support from Governments and partners, however, is key to enabling the initiative to respond effectively to the need for better information on climate change vulnerability, impacts and adaptation for Governments and other main stakeholders.

* UNEP/EA.1/1.

** Issued without formal editing.

K1401009 260514

I. Introduction

1. The Global Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA)[1] represents an interface between the research community and decision makers and other stakeholders to improve policy-relevant research on vulnerability, impacts and adaptation (VIA), allowing scientists to coordinate and facilitate the dissemination and practical application of their research. PROVIA helps international community of practice share practical experiences and research findings by improving the availability and accessibility of knowledge to the people that need it most. PROVIA aims to do so together with collaborative partners, knowledge networks, and the larger VIA community, by identifying research needs and gaps, helping scientific community to mobilize and communicate the growing knowledge-based on VIA so that governments and other main stakeholders are able to solicit scientific knowledge into their decision making processes.

2. PROVIA has two overarching objectives:

(a) To advance policy-relevant research on vulnerability, impacts and adaptation related to climate change;

(b) To coordinate and facilitate the dissemination and practical application of this research for benefit and value of society.

3. Specific objectives of PROVIA are:

(a) To build a new and important interface between the research community and decision makers and other stakeholders involved in VIA issues;

(b) To promote communication between the community of researchers working on VIA issues and users, by providing a vehicle for exchanging new research results, encouraging cooperative work on specific research challenges, and providing a forum for improving the relevance of research;

(c) To identify VIA research gaps, priorities and critical emerging issues that are important to both the science and policy communities;

(d) To provide a new avenue by which decision makers can solicit scientific input to new critical policy issues;

(e) To contribute to the capacity building of young scientists in developing countries to carry out scientific assessments of climate change VIA.

II. Progress, current status and future directions

4. In February 2013, the twenty-seventh and first universal session of the United Nations Environment Programme (UNEP) Governing Council/Global Ministerial Environment Forum (Nairobi, 18-22 February 2013) adopted a decision on PROVIA[2] that provided much needed political support from the Member States to PROVIA.

5. In May 2013, the World Meteorological Organization Executive Council decided to include PROVIA as a component of the World Climate Programme (WCP) in addition to the existing three components the Global Climate Observing System (GCOS), the World Climate Research Programme (WCRP), and the World Climate Service Programme (WCSP).[3]

6. Following the inclusion in the WCP, PROVIA has been actively engaged in the WMO EC Working Group on Climate and Related Weather, Water and Environment Matters (ECWG-CWE) Seventh Session meeting (10-12 December 2013, Geneva)[4], and the GCOS Steering Committee Twenty-first Session meeting on 22-24 October 2013 in Offenbeach, Germany.

7. Over the period from March 2013 to March 2014 PROVIA has implemented the work plan agreed by the PROVIA Scientific Steering Committee (SSC), which included the activities, and delivered outputs as follows:

[1] http://www.unep.org/provia.

[2] UNEP/GC.27/17.V.

[3] Resolution 6 (EC-65).

[4] http://www.wmo.int/pages/prog/wcp/cca/documents/ECWGCWE-7-Report_270114_Final.pdf.

8. **Activity 1: Defining global research priorities to support adaptation planning and implementation.** A report 'Research Priorities on Vulnerability, Impacts, and Adaptation: Responding to the Climate Change Challenge'[5] was published. The report compiles global VIA research priorities identified through a consultation process with both scientists and policymakers to respond to the demand for better coordination of policy-relevant research. The 33 topics are organized in three sections: information to support policy decisions; systems and regions; and emerging topics. Vulnerabilities of the following systems are addressed: food system; water system; ecosystems; energy system; and infrastructure systems and the build environment. Critical geographical areas are also identified. A summary of the findings was disseminated at various fora including the nineteenth session of the Conference of the Parties to the UNFCCC (COP 19, November 2013, Warsaw, Poland).

9. **Activity 2: Provide advice and scientific information to the UNFCCC and other international bodies, to enable more effective adaptation.** PROVIA is, in a number of ways, an active provider of scientific information to the UNFCCC process, and is now a designated partner of the Nairobi work programme on impacts, vulnerability and adaptation to climate change. PROVIA presented its research priorities for vulnerability, impacts and adaptation to the UNFCCC SBSTA 38 Research Dialogue Workshop (June 2013, Bonn, Germany).

10. **Activity 3: Strengthen communication within the Vulnerability, Impacts and Adaptation Research community and provide an interface with stakeholders affected by climate change.** PROVIA is promoting communication of VIA information through a number of mechanisms, including a regularly updated PROVIA website[6] and a quarterly newsletter. PROVIA is one of the strategic partners and conveners of a biennial International Adaptation Conference that brings together research scientists, policy makers and practitioners from developed and developing countries to share knowledge about adaptation challenges and opportunities. In May 2014, PROVIA co-hosted The Third International Climate Change Adaptation Conference 2014 (Adaptation Futures 2014, Fortaleza, Brazil). The Fourth International Climate Change Adaptation Conference 2016 will be organised by the European Union (EU) and PROVIA and will be hosted by the Government of the Netherlands to coincide with the Dutch presidency of the EU.

11. **Activity 4: Improving practices of assessing climate change vulnerability, impacts, and adaptation.** PROVIA has released 'PROVIA Guidance on Assessing Vulnerability, Impacts and Adaptation to Climate Change'[7] dedicated to climate adaptation planners. The guidance helps adaptation practitioners assess vulnerability, impacts and adaptation, covering the wide array of approaches, methods and tools with focus on practical implication to the development of specific, sectoral or place-based approaches with case studies and good practices for effective adaptation. The recommendations of the publication were featured at the nineteenth session of the Conference of the Parties to the UNFCCC (COP 19, November 2013, Warsaw, Poland). A summary[8] was produced to provide an overview of the PROVIA guidance report. Another report 'Supporting NAP development with the PROVIA Guidance: A user companion'[9] was also produced to explain how the PROVIA Guidance can be used to better understand key concepts and available methods and tools to support UNFCCC National Adaptation Planning Process[10].

12. In 2013, the PROVIA Communication and Outreach Strategy was developed and adopted by the PROVIA SSC to help achieve its organizational objectives, and to help PROVIA engage effectively with internal and external partners and stakeholders. PROVIA implements outreach strategy through the growing network of scientists, practitioners and decision-makers to improve the availability and accessibility of VIA knowledge for effective adaptation.

13. The PROVIA Resource Mobilization Strategy was developed and adopted by the PROVIA SSC to outline an overall strategic approach for PROVIA to efficiently and effectively mobilize resources for its work.

[5] http://www.unep.org/provia/RESOURCES/Publications/ResearchPriorities/tabid/130750/Default.aspx.

[6] http://www.unep.org/provia.

[7] http://www.unep.org/provia/RESOURCES/Publications/PROVIAGuidancereport/tabid/130752/Default.aspx.

[8] http://www.unep.org/provia/Portals/24128/PROVIA_guidance_summary_low%20resolution.pdf.

[9] http://www.sei-international.org/mediamanager/documents/Publications/Climate/PROVIA-NAP-user-companion-2014.pdf.

[10] http://unfccc.int/files/adaptation/cancun_adaptation_framework/application/pdf/naptechguidelines_eng_high__res.pdf.

14. The work of PROVIA is constrained by limited resources available. UNEP has been the only organization supporting PROVIA since its inception in 2010. Acknowledging the potential of PROVIA in filling the VIA knowledge gaps, the Government of UK provided a voluntary financial contribution that has allowed supporting some priority activities.

15. PROVIA is seeking sustained sources of funding for the activities and the Secretariat. The PROVIA Secretariat is understaffed, while the activities of PROVIA continue to increase in number and scope. The PROVIA Secretariat will need to grow in order to support implementation of planned activities effectively, especially as PROVIA continues to increase in visibility and prominence.

16. For 2014 the PROVIA SSC has agreed to focus on the following:

(a) *Promoting a science-policy dialogue:* develop a series of Policy Briefs to facilitate regular reporting to policymakers and civil society of the latest results from the VIA community; organize a series of regional and national science-policy dialogue meetings with policymakers and other stakeholders;

(b) *Reaching out to a wider community:* communicating findings from recently published two PROVIA reports. Produce a regular e-newsletter (quarterly) that will provide information on upcoming events, new developments, and publications; maintain the PROVIA website[11]. PROVIA will be engaged to assist outreaching the findings of IPCC WGII Fifth Assessment Report;

(c) *Capacity building - cultivating a new generation of scientists:* support a mentoring program for young research fellows from developing countries in the area of VIA research. This would be carried out in close cooperation with START[12], The One United Nations Learning Partnership (UN CC:Learn), the UNEP AIACC Project (Assessment of Impacts and Adaptations to Climate Change), and the UNEP-sponsored Global Adaptation Network (GAN); co-organize VIA-related training workshops for developing country researchers and practitioners, in close cooperation with the above mentioned organizations.

17. Depending on resource availability, plans include activities that respond to growing demand of knowledge in VIA, and communicating this knowledge to a wide range of climate change adaptation stakeholders. Those include:

(a) ***Mining the past for a better future – study report.*** A core challenge to both the policy and scientific communities is how to measure progress in adaptation. At present large scale funding is being considered for implementation of adaptation but relatively few methods and technologies of adaptation have been properly evaluated, especially adaptation in practice. Important questions such as, how we can measure the outcome and effectiveness of adaptation policies and practices, how this experience can be best conveyed to adaptation planners so as to get the most out of adaptation investments, need to be responded. The goal of the study is to find out proactive efforts to reduce vulnerability to disaster, interventions to increase the resilience of communities to a wide range of or stressors including climate variability, and broader poverty reduction programmes. This will require cooperation between the policy and science communities. The outcome of this study would be indicators of progress towards adaptation and the case book of studies that will be a resource book for the policy community.

(b) ***Developing and analysing scenario of climate adaptation and socioeconomic trends.*** The next generation of impact and adaptation assessments require an analysis of future socio-economic and adaptation scenarios. The scenarios should address questions such as: What adaptation will be needed between now and 2030 to cope with early unmitigated impact? And, what are the likely unavoided impacts beyond 2030? PROVIA will both lead in the development of new scenarios, and develop an accessible guide to the methods of scenario development for VIA assessment.

(c) PROVIA has already organized a scoping workshop on ***scientific approaches to monitoring and evaluation of climate adaptation*** in London, August 2013. The workshop identified the areas where gaps in monitoring and evaluation of climate change adaptation remain. The findings and recommendations of the workshop were presented to the UNFCCC Adaptation Committee meeting in September 2013. PROVIA will initiate follow-up activities based on the workshop outcomes to address at least 2-3 urgent gaps in monitoring and evaluation of adaptation.

[11] www.unep.org/provia.

[12] http://start.org.

18. The Fifth PROVIA SSC Meeting was organized in May 2014, in Fortaleza, Brazil, attended by representatives of the UNFCCC secretariat, WMO, Future Earth, IPCC Working Group II Co-chair, UK Department of Energy and Climate Change and the European Commission. The SSC:

(a) Noted that collaboration with partners have improved coordination of international research on the impacts and responses to climate change and addressing gaps in the growing VIA knowledge, especially those gaps that are important to fill to achieve major policy objectives, such as those of the UNFCCC;

(b) The Committee decided to work together with collaborative partners, knowledge networks such as the UNEP-led Global Adaptation Network, and the larger VIA community, UN organization and Governments, and will assist in the outreach and dissemination of the findings of the IPCC Working Group II Fifth Assessment Report.;

(c) The Committee noted the growing demand for PROVIA's Guidance on assessing vulnerability, impacts and adaptation, especially for training on using the Guidance document. PROVIA is already providing technical support to LDCs with country driven process to advance National Adaptation plans (NAPs) based on the Guidance report (To be finalized after the SSC meeting in May 2014).

III. Conclusion

19. PROVIA demonstrated strong potential as an authoritative global initiative responding to the need of governments and other main stakeholders for a single, cooperative instrument that helps coordinate VIA research globally; a need for more effective dialogue between the research and policy communities; and a need to prioritize VIA research and communicate this prioritization to research practitioners, governments and international agencies.

20. PROVIA continues its work, in collaboration with implementing partners, and strives to promote a greater science-policy dialogue while advancing efforts towards identifying research gaps and meeting policy needs in climate change vulnerability, impacts and adaptation. PROVIA continues its effort to help the scientific community to become more organized and communicate vital VIA information, increasing the ability of societies to effectively anticipate and adapt to climate change impacts.

21. PROVIA will continue working on the four priority activities, especially coordinating and communicating results to various stakeholders, and will also commence new activities. However, as PROVIA continues to deliver, it still faces a number of challenges. PROVIA requires continuous support from governments and partners in order to more effectively respond to the need for better VIA information for decision makers.

UNITED NATIONS

EP

UNEP/EA.1/INF/13

Distr.: General
16 May 2014

English only

United Nations Environment Assembly of the United Nations Environment Programme

United Nations Environment Assembly of the United Nations Environment Programme
First session
Nairobi, 23–27 June 2014
Items 5 and 6 of the provisional agenda*

Policy issues

Follow-up to and implementation of the outcomes of United Nations summits, in particular the United Nations Conference on Sustainable Development, and major intergovernmental meetings of relevance to the United Nations Environment Assembly

Status of the Global Environment Monitoring System Water Programme and pathways to the future

Note by the secretariat**

Summary

The present note, to which reference is made in the reports of the Executive Director on the implementation of Governing Council decision 27/2 (UNEP/EA.1/2/Add.1) and on the state of the environment (UNEP/EA.1/4 and Add.1), provides additional information on the Global Environment Monitoring System Water Programme (GEMS/Water). The outcome document of the United Nations Conference on Sustainable Development, "The future we want", emphasizes the urgent need to address water quality and water pollution and provides strategic direction on key actions needed to improve freshwater quality and monitoring. Among the proposals for the post-2015 development agenda, a number of water quality and water pollution issues feature prominently, in particular on wastewater and water-quality-related indicators, highlighting the importance of a global water quality programme such as GEMS/Water in providing the reliable water quality data and information needed for the effective management of water resources. GEMS/Water is currently undergoing an evaluation and inclusive redesign process taking account of a new United Nations Environment Programme partnership model presented at the meeting of GEMS/Water partners and donors held in Nairobi from 3 to 5 March 2014 and the GEMS/Water scoping meeting held in Stockholm in September 2013. Key partners and stakeholders have worked out modalities, outlined a rationale and carried out an initial mapping of individual partner preferences. The potential for enhancing GEMS/Water benefits and services for global, regional and country-based water quality assessment and policy information, including in providing evidence and knowledge products for the post-2015 process and the new Global Environment Outlook (GEO), have been explored. Significant opportunities emerged from the recent launch of UNEP Live as the central knowledge management platform based on open access to environmental information, synthesis and services. UNEP Live will provide freshwater quality assurance and quality-control assured-data and information in support of the GEO process.

* UNEP/EA.1/1.

** Issued without formal editing.

K1401008 260514

I. Purpose and objectives of GEMS/Water

1. Assessment processes constitute the fundamental building blocks that support UNEP's core mandate to keep the world environment situation under review. A successful water quality monitoring and assessment programme must be underpinned by credible science, institutional networks, partnerships and multi-stakeholder collaborative mechanisms, which provide a number of support functions, such as catalysing data flows, facilitating access to and sharing of environmental information. Collectively, these structures and functions support various levels of decision-making, from global to local and set priorities for technology support and capacity-building interventions.

2. Building on the Millennium Development Goals (MDGs) within the Post-2015 agenda, the ongoing development of a set of universally applicable Sustainable Development Goals (SDGs), includes a number of proposals with issues of water quality and pollution prominently featured.

3. Pathways for the future GEMS/Water will therefore be to enhance -and take a lead in environmental water quality assessments and the development of water quality indices relevant to policy decision making. The goal is to continuously provide the evidence base in the wider water quality context enabling informed sustainability transitions and sustainable development. Future products of GEMS/Water will be tailored to (a) improve data coverage, time series data, and enabling multiple scale assessments feeding into processes such as the GEO; (b) inform the post 2015 process towards, SDGs; (c) be an information pool for inclusive knowledge management in the context of sustainable water quality, use and development; (d) support water quality, quantity monitoring; and (e) assess water risks and vulnerability in light of global megatrends and climate change.

4. The role of GEMS/Water within and outside the UN system in monitoring and providing reliable water quality data and information needed for evidence based management of water resources are still and increasingly valued. The 26th UNEP Governing Council (GC) in February 2011 in its decision 26/14 encouraged Governments and other organizations to participate actively in the GEMS/Water Programme by contributing water quality data and information; and inviting Governments and others in a position to do so, including the private sector, to provide financial and in-kind support for GEMS/Water Programme capacity-building and transfer of technology efforts in developing countries. It also called for further development of the programme through creating a knowledge base for assessing water quality; promoting access to information; and strengthening capacity to enhance monitoring programmes and analytical assessment and research activities for integrated water resource management in developing countries; and encouraging cooperation at the regional level to enhance water monitoring at the global level. The progress made in the implementation of the decision was recognised and welcomed by the 27th UNEP GC/GMEF in February 2013.

II. Background

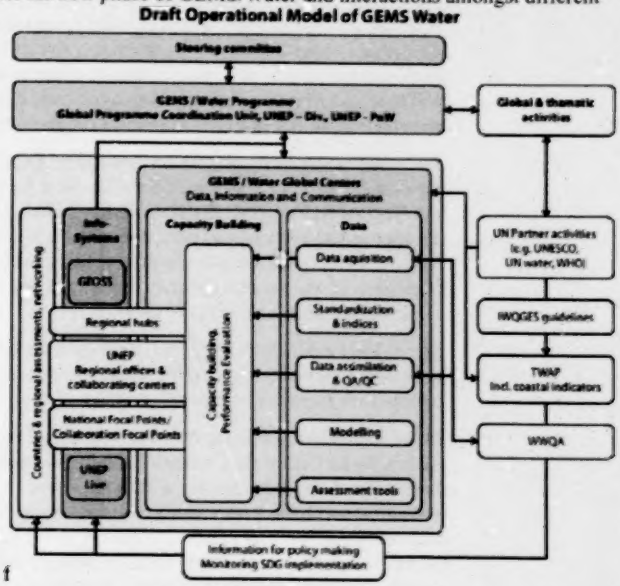
5. The GEMS/Water programme is a global programme of the United Nations on water quality whose activities are coordinated by the United Nations Environment Programme (UNEP). In mid 1970s, its activity centre was established in UNEP to coordinate various environmental monitoring programmes carried out globally particularly those within the United Nations System. It comprised five interrelated components and worked through the collaboration between UNEP and other specialised agencies, such as the World Health Organization (WHO), the World Meteorological Organization (WMO), and the United Nations Educational, Scientific and Cultural Organization (UNESCO). Evolving from the pollution and water quality components, the Water Programme of GEMS is one of the two GEMS programmes that has been carried on till today and remained true to its original mandate in acquiring water quality data globally through the global water quality monitoring network. For the past decade, the GEMS/Water Programme has been supported by the Government of Canada, facilitated by Environment Canada and its Canada Centre for Inland Waters to build knowledge and capacity on inland water quality issues.

6. In response to critical issues such as increasing global water quality degradation, and decreasing sustainable aquatic services as identified by several UNEP assessments, an operational strategy for freshwater (2012-2016) was developed to provide a more concentrated and focused approach to freshwater based on its mandate and comparative advantage. The UNEP Water Operational Strategy 2012-2016 identifies four priority areas for action: (1) Meeting the water quality challenge; (2) Benefiting from aquatic ecosystems; (3) Building resilience to climate change through water management; and (4) Mainstreaming resource efficiency. The operational policy reflects on the importance of reversing water quality degradation in the world's freshwater ecosystems to ensure sustainable provision of ecosystem services and benefits. In implementing *Strategic Priority 1 Meeting the global water quality challenge* through its biennial programmes of work, UNEP has centrally

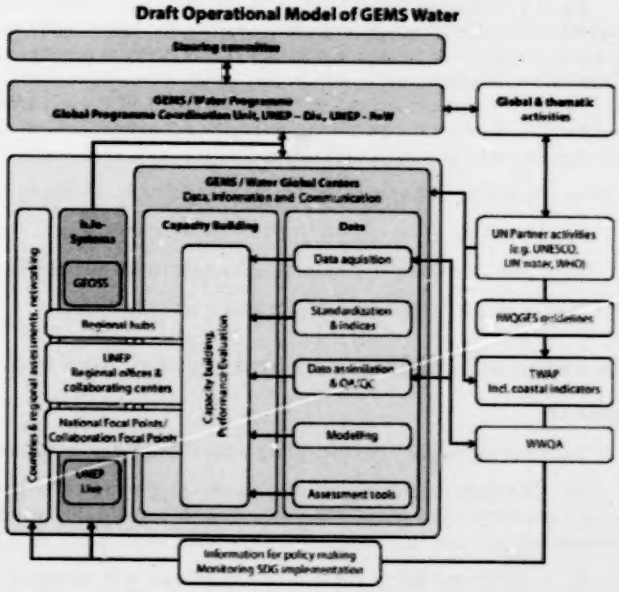
positioned the GEMS/Water *to provide technical support to countries in their efforts to improve and expand water quality (WQ) data collection and intensify global and regional assessments of the status of water quality in critical freshwater ecosystems and improve accessibility to reliable data through the global water quality data base.*

Transition phase and co-hosting arrangements

7. The proposed structure for the new phase of GEMS/Water and interactions amongst different components is illustrated in the f



8. w, where the roles of each element are outlined.



9. The Global Programme Coordination Unit (GPCU) will be based in UNEP's Division of Early Warning and Assessment in Nairobi with support and input from UNEP's interdivisional water group and the Steering Committee. Under the proposed arrangement, UNEP will strengthen the GPCU to provide a more effective coordination and management. It requires: (1) a Programme Management

Officer; (2) a Programme Officer in a supportive role; (3) two Junior Programme Officers engaged from partner governments whenever the opportunity arises; (4) the Fund Management Office (FMO) with one officer designated to support the programme and one general support staff. Services to inform policy making and coordinating direction are part of the responsibilities of the GPCU. Through representation by senior UNEP management it shall provide support to the United Nations Environment Assembly (UNEA).

10. The Steering Committee (SC) will be chaired by the Director of UNEP's Division of Early Warning and Assessment. It will provide guidance to the GPCU on how best to synergise with other similar and complementary programmes/activities, and assist in soliciting wide support for the implementation as well as partnerships in order to build stronger networks of collaborators. The SC will agree on its own operational arrangements, e.g. modes of communication, frequency of consultation, selection of new members if necessary, etc.

11. GEMStat Unit and Quality Assurance/ Quality Control (QA/QC): Under an Agreement between UNEP, The German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) through the German Federal Institute for Hydrology (FIH) shall provide the appropriate professional personnel, technical facilities and their maintenance and technical support. As part of its efforts towards ensuring credible water quality data from laboratories in developing countries – it will support capacity building activities including conducting of performance evaluation studies in collaboration with the GPCU.

12. The GEMS/Water Programme will be supported by a global network comprised of regional hubs, National Focal Points (NFPs) and Collaborating Focal Points (CFPs). A set of collaborating centres with expertise in particular areas will complement the new network structure.

13. Under partnership agreements currently being developed between Ireland and UNEP, a new GEMS/Water Centre for Capacity Building is foreseen at University College Cork in Ireland to lead the capacity building activities with support from a consortium of Irish universities and institutions. It will partner with the FIH in Germany as co-hosts of the new GEMS/Water Programme and engage with regional and other partners of the GEMS as appropriate. The Capacity building element of the GEMS/Water Programme will build knowledge and skills for monitoring and analysing of Water Quality (WQ) parameters at national, regional and global level and also institutional level. If sufficient resources are applied to this component, the GEMS/Water member countries should eventually reach the same standard in analysis.

14. The WQ assessment element will make use of WQ data at the GEMStat database to contribute to targeted assessments. Through projects like the World Water Quality Assessment (WWQA), the programme is also able to re-engage with its NFPs and CFPs to generate more and updated WQ data and information. It will provide an opportunity for the programme to work closely with the UN-Water Group, its partners, regional and national institutes. On country level and based on an open data policy foreseen in UNEP Live it is expected that countries will enable access to a broader and more comprehensive scope of water quality information.

15. Initially, the new Programme will in the near future be advised by two expert groups:

(a) Working Group on Data (to be led by Germany);

(b) Working Group on Capacity-building (to be led by Ireland).

The terms of reference for both working groups are yet to be defined.

III. New vision of GEMS/Water and the way forward

A. Objectives

16. The following are the objectives of the new GEMS/Water programme:

(a) The new programme will mobilise and support the collection, generation, analysis, open access and more sharing of special and a wide range of water quality parameters that are QA/QC-assured and will increase the visibility of GEMS Water and improve the dissemination of its products;.

(b) At regional and global level, the programme will participate in and assist in regular assessments of the status and trends of freshwater quality; and increase regular data submission from member countries as part of national contributions to UNEP Live and fill the gaps in terms of spatial coverage, parameters measured, time variability and consistency;

(c) The programme will increase networking at different levels from global to national and enhance the capacity of developing countries in water quality monitoring and analysis and data input in the GEMStat database and advance program coordination and implementation.

B. Functions

17. The new GEMS/Water programme will adopt a more integrated approach in upwelling data and information to support assessment processes and inform decision-making. The main functions of the new programme are summarized below.

18. **Use of the UNEP Live platform and other information dissemination media**: The mechanisms will be used to provide freshwater quality-QA/QC assured data and information in support of assessments, policy and decision making and other water-related initiatives within the UN system and produce relevant value added policy products.

19. **Support to sustainable development goals on water quality**: The GEMS/Water programme through the UN-Water[1] mechanism can play a key role in supporting the SDGs development and monitoring processes. Surface and ground water quality data is a valuable asset of the GEMS/Water programme. Large amounts of data have been collected in the past 35 years from approximately 4,600 monitoring stations from over 125 countries. There are in excess of 4.6 million data values stored in the GEMS water database, the *GEMStat*. These range from 1965 to 2013, depending on region/country. If continuously further developed and addressing the still considerable data gaps these time-series data can support the SDG process in establishing the baseline for selected indicators and providing the evidence base for tracking the progress made towards the targets. Disaggregated data in the database is also useful for assessments and important to the development of indicators and statistical analyses. However, although GEMS/Water has been working through an extensive network of national monitoring programmes and collaborating institutions to upwell data from countries and regions, considerable gaps still exist in temporal, geographical and parameter coverage. It is expected that working through UNEP Live and the UNEP Regional Offices will provide new avenues for mobilizing country data in a broader and continued coverage.

20. **Support to the UN-Water Group, Water Quality assessments and management activities**: Through UNEP's membership in the UN-Water Group, the GEMS/Water programme is well placed to support the UN-Water Group in its coordinated contribution to the processes leading to 2015 and beyond. The work of GEMS/Water on water quality indices and assessments could serve as a starting point for the establishment of a harmonized and coherent global monitoring system and a regular assessment process such as the World Water Quality Assessment Report providing information for water resource management at the national, regional as well as the global level.

21. **Increased WQ data for indicator development – working with UNEP Live and Regional Offices**: The UN system task team Working Group on Monitoring and Indicators when presenting the lessons learned from experience with MDGs monitoring framework, and making recommendations for the formulation and monitoring of new indicators and targets, stressed that it is important to invest in country capacities for data collection and reporting, leading to progress in disaggregation as well as towards the development of new indicators. UNEP Live (www.unep.org/uneplive) will work with countries and key partners within and outside the UN to build capacity, as a neutral broker encouraging access to data and information and to develop global regional and national perspectives. During Phase 1 of the platform, countries will have the opportunity to store, publish and decide on which data to make available through UNEP Live. This will be pilot-tested with 3-4 countries. During this phase, UNEP will contact all countries, through UNEP's regional offices, so that relevant and up-to-date information and data can be made available on the platform. This will enhance the capacity for data collection and analysis to support indicator based assessments at national and international levels. GEMS / Water (namely through GEMStat) and the World Water Quality Assessment (WWQA) Project will be requested to explore both best possible data coverage on country scale in the pilots as well as a first global coverage of 2-3 commonly agreed key parameters.

22. **Integration with transboundary initiatives**: As a direct link to GEMS and also working with UNEP Live the Global Environment Facility Transboundary Water Assessment Programme (GEF TWAP) provides five independent indicator-based assessments three of which directly referring to fresh water and to some extent the interfaces between them, including their socioeconomic and governance-related features. Their input data and indicators are being assessed and organized and will be presented in a common data portal linking five individual water system databases that contain more

[1] UN-Water is the United Nations interagency coordination mechanism for all matters related to freshwater, including surface and groundwater resources, as well as sanitation within the United Nations System and with non-UN partners.

detailed data and information (www.geftwap.org). TWAP results are aimed at informing policy-making and funding priorities, as well as to document the status of, and monitoring the trends in transboundary water systems, in response to national, regional and international management.

C. GEMS/Water Programme: key challenges

23. **Inadequate and single donor financial support**: The working model used during the past 35 years has relied almost entirely on the technical capability and support from a single donor, which on the one hand provided solid and generous support and at the same time has put some restriction on the human and financial resources of GEMS /Water.

24. **Diminishing programme's visibility**: Challenges in establishing itself as an authoritative voice in environmental water quality assessment within the UN system is linked to a need for a strong global leadership and adequate long term levels of financial support and continued data flows.

25. **Existing data coverage, consistency, and a range of critical gaps in some regions**: Thus currently available data is not always representative to provide a comprehensive global overview of the water quality status.

26. **Perceived lack of tangible benefits to members**: Data submitted to the GEMStat is sometimes perceived not to provide immediate benefits to members i.e. data providers. It will be pivotal to work with countries and build capacity and analytical skills also relying on UNEP Live to enable multi scale and issue driven assessment and analysis on country, system and institutional level.

27. Lifting GEMS / Water to a central role in the SDG process**: i.e. to be seen as the leading mechanism and enabling broker assisting in indicator focused monitoring of water quality and providing evidence for countries to scan the SDG targets in the Post 2015 process**.

28. **Keeping track on future data developments**: such as big data (remote sensing information as part of e.g. the Copernicus program) and exploring avenues to bring/link water quantity information and ultimately also link coastal and estuarine water quality.

D. Transitioning the GEMS/Water Programme and options for sustainable solutions

29. **GEMS/Water Programme transition**: The termination of the generous Environment Canada funding for GEMS/Water at the end of the current agreement, March 31st 2014 and the preparedness of a new host (BMUB through engaging FIH in Germany to host GEMStat) presents an opportunity, with Ireland, as co-host namely focusing on capacity building. The goal is to rethink the role and structure of GEMS / Water including to identify new ways towards strong global leadership and multiple donor input to global water quality assessment. It is critical to establish a collective process of technical structural and funding discussions with partners and stakeholders to build on past accomplishments and experiences in developing a new sustainable GEMS/Water programme. Several evaluations of the GEMS/Water Programme since 2002 by Environment Canada and UNEP suggested possible future options, business and governance models for the Programme. The information provided in these evaluations and reviews, plus suggestions and recommendations emanating from consultations with water quality experts and colleagues in the water quality field, serve as the basis for proposing a draft future business and governance model for GEMS/Water based on a strong global leadership and a multiple donor support. Critical issues facing the programme are to be taken into consideration together with emerging water quality challenges. There is need to look at existing and emerging opportunities and capitalise on these namely working closely with and relying on the support by UNEP Live and the countries to be engaged through UNEP Regional Offices.

30. **GEMS/Water Programme: capitalising on opportunities**: There are opportunities that may have a significant bearing on how the proposed programme is designed. These opportunities are described and grouped as follows (albeit not exclusively).

Creating strong partnerships and technical support

31. A business model with strong global leadership and a support base of many partners and donors with long term funding is needed. This provides an opportunity for potential new donors and or technical partners to get involved in GEMS/Water programme based on their specific areas of interests and technical expertise. A broad based financial support at regional level with the engagement of regional hubs in resource mobilisation, targeted towards appropriate water quality assessment and capacity building projects is desirable. All these aspects have been successfully addressed in a first partnership and donors meeting held at UNEP headquarters 3-5 March 2014 back to back with the World Water Quality Assessment and the International Water Quality Guidelines for Ecosystems

project. This underlines that UNEP aims to make the development of the new business model a collective and inclusive effort together with partners.

32. There is a need to establish a stronger relationship with water quality institutions and organisations at regional level especially in developing countries and countries with economies in transition, through delivery of appropriate water quality assessments, training and capacity building initiatives that address their needs at that level.

33. Programmatic synergies between the GEMS/Water Programme and other UN Agencies, e.g. World Meteorological Organization (WMO), World Health Organisation (WHO), UNESCO International Hydrology Programme (UNESCO/IHP) can be enhanced e.g. through regular UN-Water Group meetings.

34. Similarly, internal cooperation between GEMS/Water and other UNEP water-related programmes, e.g. The Global Plan of Action for the Protection of the Marine Environment from Land-based Activities (GPA) or UNEP Regional Offices should be noticeable and explored for appropriate activities.

35. UNEP-Live (www.unep.org/uneplive) in its function as a knowledge management platform designed to bring together relevant but widely dispersed archived and current information for policy-making will enable the use of global services combined with regional, national and local data to identify key emerging environmental issues and support integrated assessments and policy analysis on the state of global, regional and local environments. The principles used for UNEP Live include open access and the sharing of data once for multiple uses.

Improving the availability of data

36. To deal with the problem of data coverage and gaps there is opportunity for involvement in regular and comprehensive global overviews of the water quality status. Therefore a variety of parameters, geographic coverage and inclusion of many types of water bodies in the study will be needed leading to determination and prioritisation efforts in data collection and networking. Promotion of data collection from basin-level projects and activities initiated at the regional level and supported by the programme at the global level to beef up submissions in the GEMStat database.

37. The updating and added developments in the GEMStat database provides an opportunity to provide more assistance and web based tools to users on data analysis and interpretation of their results, especially in support of policy decision making;

38. Providing of a countries open access to QA/QC checked Water Quality on the UNEP Live platform, will encourage interaction between users and data providers. This could lead to a wide range of uses for academia, business and policy development and enactment.

Strengthening capacity building in developing countries

39. Capacity building activities have depended on resource persons from Environment Canada. Building on this solid foundation, the current and future change provide ample opportunity to re-design, regionalise and adopt modern tools in capacity building approach for the Programme according to programmatic focus, priorities and financial feasibility.

Participating in regular Water quality assessments

40. The Post-2015 UN Development Agenda provides a great opportunity to demonstrate the value of GEMS/Water and the significant role it can play in supporting the process with its WQ data. With these data, the programme should participate in and provide guidance in periodic global and regional water quality assessments, which include a review of the state and trend of the water quality and production of reports and real time country/regional level findings posted on the UNEP Live platform.

E. Reforming GEMS/Water Programme

41. This is an opportunity for a detailed reformation of the Programme as presented in the report entitled, *The proposed Structure and Business Model for GEMS/Water*, whose highlights are as follows:

42. **Regional Hubs**: to be created through collaboration with regional and national centres of excellence with similar interests in water quality i.e. as Communities of Practice and the involvement of UNEPs regional offices. Their proposed roles and functions are given in the annex. For a first example under development see paragraph 43.

43. **GEMStat database**: will be hosted by the German Federal Institute for Hydrology (FIH or Bundesanstalt für Gewässerkunde (BAfG), under an Agreement between UNEP and the German

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB, acronym in German). The FIH is tasked with this responsibility by BMUB

44. **The capacity building component** under leadership with and coordination by the partners in Ireland will be redesigned. This will be carried out in collaboration with technical partners, regional hubs and UNEP regional offices. Some countries that could be potential capacity building hubs are Israel, South Korea, China, Japan, South Africa etc. Brazil through its National Water Agency (ANA) is in the process of finalizing a Memorandum of Understanding (MoU) with UNEP for a regional hub which will likely have a focus on capacity building.

45. **The Laboratory Performance Evaluation (PE) Studies** will continue as a demand driven service at a minimal cost in collaboration with Ireland, the German Federal Institute for Hydrology (FIH) and selected institutes either governmental or private in nature with expertise in PE studies and UNEP GEMS/Water Programme.

46. **The Global Programme Coordination Unit (GPCU)** will provide a strong global leadership, by strengthening the team at UNEP Headquarters to coordinate and manage the Programme.

IV. GEMS/Water Global Data Centre - GEMStat

47. After 35 years of successful operation of the GEMS/Water Global Data Centre including the global water quality database GEMStat in Canada, the Government of Germany supports the operation of GEMStat as of April 1st, 2014.

A. Organization

48. The GEMS/Water Global Data Centre, funded by the German Federal Ministry for Environment, Reactor Safety and Construction is facilitated by the German Federal Institute of Hydrology and the German Internal Hydrology Programme – of UNESCO and Hydrological Water Resource Programme - of WHO (IHP/HWRP) Secretariat and operates under the auspices of the UNEP GEMS/Water Global Coordination Unit.

49. In the course of 2014, the full operational state of the data centre will be established gradually subsequent to migrating the GEMStat database and information system and hiring staff. From 2015 onwards, five full-time employees are being planned to support the operation of the data centre.

B. Content

50. The GEMS/Water Global Data Centre has the following main functions:

(a) Collect water quality monitoring data from national partners and collaborating organizations in GEMStat and enhance its accessibility and interoperability;

(b) Control and assure data quality within the database and support partners on samplings, analysis and QA/QC methods;

(c) Contribute to water quality assessments and guidelines for environmental water quality;

(d) Develop reports and data products to improve the knowledge on global water quality issues;

(e) Enhance the capabilities to monitor post-2015 development with regards to water quality and targets;

C. Technical

51. The existing GEMStat database and information system is currently being migrated and updated maintaining the current functionality and developing/enhancing the user experience and interoperability with existing global information system such as UNEP Live and GEOSS.

52. The focus of the technical development is on implementing and promoting open data exchange formats and web services to foster free access and to improve collaboration.

D. Regional implementation

53. Regionalisation will increase visibility and help GEMS Water to have better operational activities in the future by responding more effectively to country needs in capacity building and technical support. This strategy will lead to the creation of regional hubs in institutions that have a leadership on water quality monitoring and assessment.

V. Programme support functions and structures

54. Through the transition into a new business and governance model, the GEMS/Water programme will build partnerships with the world water community and institutions interested and engaged in capacity building by increasing participation of developing countries in water quality monitoring, assessment, research and reporting, developing training courses and promoting partnerships to deliver via regional centres of excellence, making data accessible on UNEP Live and building constituencies for continued data flows.

A. Partnerships and the new GEMS/Water Network

55. Partnerships and networking are essential to the Programme's success and sustainability. To provide direct support to the implementation of the work programme at the global level, strategic partnerships are being established with the Governments of Germany and Ireland particularly on the management of GEMStat and capacity building activities, respectively.

56. At the regional level, GEMS/Water is actively seeking to develop new partnerships with governmental and non-governmental institutions having relevant technical and training profiles and common mandate in water quality to serve as regional hubs for capacity building. Regionalisation will help GEMS/Water to have a better operation in the future by responding more effectively to country needs in capacity building and technical support. This strategy will lead to the creation of regional hubs in institutions that have a leadership on water quality monitoring and assessment. The support of technically skilled personnel through a comprehensive partnership network is essential for GEMS/Water in the future.

57. This approach will evolve through the advice of the Steering Committee. To date, the Government of Brazil (through ANA) has expressed its firm interest in becoming a regional hub for Latin America and the Caribbean as well as supporting the capacity building activities for Portuguese-speaking countries in Africa. A related MoU is in its final stages. In addition to developing partnerships for direct support, the Programme will also examine where programmatic synergies and complementarity can be found through partnerships within and outside the UN system in order to optimise the resources and maximise the programmatic impacts to reach the common mandate on water. At the global level, GEMS Water should be closely affiliated with UN Water Group, UNESCO and the WMO.

58. The existing GEMS/Water network of NFPs are formally designated by countries as entities responsible for the sharing of water quality data and information with GEMStat as well as coordinating with the Programme on capacity building needs and activities. The programme also reaches out to other data sources by working with a network of CFPs from academia, research institutions and other organisations such as river and lake commissions. Efforts have been made over the past two years to revitalise, build and strengthen the networks through formal letters to the appropriate government ministries dealing with water quality in each country. Four workshops have been organised in liaison with regional Offices, ensuring a more engaging, building and strengthening of the networks. Forty countries were involved in this network strengthening process. Currently there are 83 NFPs and 18 active CFPS. This process has to continue with a closer involvement of UNEP's regional Offices to re-confirm, or indicate new designation of NFPs. The Data Working Group will provide advice on identifying and engaging other key institutions to partner with for data collection and sharing.

Regional Network Hubs

59. Regional hubs will promote broad-based collaboration and building Communities of Practice with partner institutions that have similar interests in water quality management and will contribute to the implementation of GEMS/Water activities. As opposed to depending on a single institution for all WQ activities in all locations as in the past, the decentralised approach through regional hubs will increase efficiency in delivery of services response to specific needs of countries. The model will also enhance international cooperation (north-south and south-south), and partnerships with governments, universities, centres of excellence, and individual experts – both donors and recipients of assistance. Focus of assistance will be mainly to developing countries and countries with economies in transition. The detailed draft criterion for a hub, (see annex) with roles and functions has been developed and may receive further input from other potential hubs.

60. In principle the role and responsibilities of a hub includes:- close collaboration with the GPCU; carrying out or participation in WQ assessments; carrying out regional/national training in water quality monitoring and analyses; participating in the development and application of GEMS/Water capacity building tools; encouraging and spearheading submission of country level WQ data to the

UNEP Live Platform; and contributing to the Programme's fundraising efforts by carrying out resource mobilisation at the regional level; and organising WQ outreach activities, among others. UNEPs regional Offices will closely follow up on activities of regional hubs and will assist the GPCU in coordination of activities at this level.

Member countries network

61. National Focal Points: In the past, data submissions have been through formal agreements between GEMS/Water and each national WQ authority submitting data and information through the designated NFP on a variety of parameters, on a yearly (or one time per year) basis. This practise will need to be reworked through discussions with the GEMS/Water Programme, and the new host of the GEMStat. In addition, modalities for making data available on the open access system of UNEP Live will be worked out with the GEMS/Water Programme.

Collaborating Centres Network

62. In addition to data provided by national authorities, GEMS/Water also welcomes data and information provided by other institutions and monitoring programmes that regularly monitor water quality through a Collaborating Focal Point (CFP), e.g. universities, research organisations, river and lake commissions, intergovernmental organisations, non-governmental organisations, etc. Currently GEMS/Water has a network of institutions contributing data to the Programme, e.g. Mekong River Commission, etc. Opportunities for use of their data on the UNEP Live open access system will have to be developed.

B. Capacity-building

63. Building and strengthening institutional and human capacity of countries to collect, generate, analyse and share freshwater quality data and indicators remain a priority for GEMS/Water. Communicated through the GEMS/Water networks, the requests from countries for capacity development cover a variety of subjects ranging from, for instance, technical capacity to conduct laboratory analyses, or capacity to design a national water monitoring programme and select meaningful indicators, to institutional capacity to use scientific data for assessment, providing information for water policies and regulations. Such diverse demands require a comprehensive approach to effectively tackle the challenges from technical and technological aspects through stronger and broader collaborations with existing and new networks of partners, centres of excellences as well as Communities of Practice.

64. The capacity building in water quality monitoring is important not only in the GEMS/Water context, but also necessary in the implementation of other global processes, e.g. the Bali Strategic Plan for Technology Support and Capacity Building, the Post-2015 Development Agenda and SDGs relating to water, as well as global and regional MEAs. According to the 2013 report from the Working Group on Monitoring and Indicators of the UN system task team on the Post-2015 UN Development Agenda, capacity and potential capacity of countries for data collection, analysis and reporting are perquisite to the development and monitoring of new indicators and targets. It also stresses the importance in investing in building capacities at both national and international levels.

65. The GEMS/Water capacity building has been reconfigured to better respond to the diverse capacity needs taking into account the necessary engagement of new and potential partners and stakeholders; the need for a more robust delivery and stronger ownership of the programme at national and regional levels; and the opportunity to actively contribute to broader initiatives. Under the partnership agreements currently being developed between Ireland and UNEP, a new GEMS/Water Centre for Capacity Building is foreseen to lead the capacity building activities with support from a consortium of Irish universities and institutions. It will partner with the FIH in Germany as co-hosts of the new GEMS/Water Programme. It will be designed to deliver the work at national regional and global levels in close coordination with GPCU and a network of regional hubs. The new Centre is likely to be at University College Cork (UCC), under the umbrella of its Centre for Global Development, acting on behalf of the Irish Department of Environment, Community and Local Government (DECLG) and Department of Foreign Affairs and Trade (Irish Aid).

66. As described in Section V above, the new configuration of regional hubs will be instrumental in the national and regional implementation of GEMS/Water. A regional hub will be asked to act as a regional (or sub-regional) champion in order to facilitate and support the implementation of GEMS/Water programme on a regional (or sub-regional) scale including capacity building activities. The regional hubs serve as a direct mechanism to deliver the capacity building and training more effectively and efficiently at the regional level, in conjunction with the new GEMS/Water Centre for Capacity Building. As a bottom-up approach, the regional hubs play a key role in identifying and conveying national and regional capacity needs and priorities to the global programme.

67. In general terms, a range of capacity building activities that would be offered by the GEMS/Water Centre for Capacity Building include, for example,

(a) Design of appropriate, or tailor-made, monitoring programmes to meet specific objectives for both surface and groundwater;

(b) Technical training on sampling and analytical techniques for water quality monitoring;

(c) Training on the basics of quality assurance in monitoring programmes;

(d) Training in water quality assessment principles and approaches using national monitoring data and production of State of the Environment reports;

(e) Development of new tools and methods for water quality monitoring and assessment in relation to national needs, e.g. tailored water quality indices, biological monitoring methods, real-time monitoring, sensor development and deployment;

(f) Training of third-level teachers on monitoring method development, programme design, current approaches to water quality assessment and integrated water resources management;

(g) Training in environmental monitoring and technology-supported solutions to water quality management;

(h) Training on utility of and access to UNEP Live and its features.

68. Given a breadth of capacity issues to address and limited resources available, the Programme will also take advice from the Working Group on Capacity Building which will consider such matters as,

(a) Common demands for capacity building at global and regional levels in relation to existing capacities;

(b) Priority needs in relation to the SDGs and other key processes;

(c) Specific capacity needs to help improve the data gaps and geographical coverage;

(d) The versatility of existing capacity building tools and materials to meet the needs; and,

(e) The Programme's capacity to timely respond to countries' requests.

C. Technology support

69. Technology has a crucial role to play in the water quality monitoring. Through the consortium of Irish institutions and hubs, GEMS/Water will have the opportunity to work with a large number of universities and research institutes, including particularly those specialised in modern technologies in water monitoring and remote sensing. Emerging sensor technologies have the capability to provide real-time information on variability of pollutants present and concentrations, as well as early detection of extraordinary events. Presently the water quality information is often obtained from discrete samples and analysis of a few parameters with inconsistent frequency for some parameters both temporally and spatially. This leaves a gap that can be filled by innovative technologies such as in-situ sensors where continuous high-frequency data can be accessed on-site or remotely. To the extent possible, GEMS/Water aims at promoting the accessibility to and application of innovative and affordable technologies to enhance the capacity of developing countries to apply and benefit from the new innovations. This will also provide countries with an opportunity to be involved in the technological research and development.

VI. Conclusion

70. During the transition phase, links/synergies between GEMS/Water and water assessment activities will be strengthened and operationalized (if not yet the case). Links to activities aiming to guide indicator and normative processes such as the international water quality guidelines for ecosystems (IWQGES) will be worked out. GEMS may play a critical role as a nucleus supporting the different initiatives in the broad aspect of water quality monitoring and ensuring quality and scientific rigor to enable evidence based decision making. This is seen as a key contribution to the Post 2015 development agenda. The plans to address data gaps on water quality as well as ways and means to collect data from both technical and political contexts will be worked out in more details. The GEMS/Water programme will address the national capacity building and promote country buy-in with regard to data accessibility and collection (including the different ways and means of technological development). It will build a strategy to monitor and support the water quality and waste water related aspects in SDG targets and will liaise with appropriate partners and organisations in the field of data

management. Here GEMS/Water is well positioned to improve global coverage and consistency of water quality related data and to make use of the technical, educational and scientific opportunities. Pathways for the future will be for GEMS/Water to support and customise capacity development efforts, improve freshwater monitoring systems and exchange technology that can support national, regional and global assessments namely also in contribution to the regional and global implementation of UNEP's Global Environmental Outlook (GEO) process.

Annex

Draft terms of reference: GEMS Water/ regional hubs

Mission

Supporting the regional implementation of GEMS Water towards coherent regional water quality/quantity monitoring and enabling multi scale assessments and decision support

Rational

1. As opposed to depending on a single institution for all WQ activities in all locations as in the past, the decentralised approach through Regional Hubs is aimed to increase efficiency in the delivery of services in response to specific needs of countries/regions. The model will also enhance international cooperation namely north-south and south-south exchange and capacity building, partnerships with governments -both donors and recipients of assistance, universities, centres of excellence, and individual experts and decision makers. Focus of assistance will be mainly to developing countries and countries with economies in transition.

2. In restructured GEMS Water – Regional Hubs will be created through collaboration with regional and national centres of excellence and Communities of Practice with similar interests and appropriate capacity in water quality monitoring, networking, and capacity building. Regional Hubs will work in collaboration with and be supported by UNEP's Regional Offices (*not only ROs, also central coordination unit*). Criteria and their proposed roles and functions in generic terms are given below. It is expected that roles and functions as well as priorities will reflect the specifics of regional needs.

Operation

3. Regional Hubs will promote broad-based collaboration with partner institutions engaged in water quality/quantity data and management and will contribute to the implementation of GEMS/Water activities on a regional scale. In general the role and responsibilities of a hub should include:

(a) Close collaboration with the GPCU, GEMStat, the capacity building centre, and data networking, including UNEP Live;

(b) Encouraging and spearheading accessibility and submission of country/regional level WQ data and working with the UNEP Live Platform, by building national and regional networks and engaging with Communities of Practice engaged in country and regional assessments;

(c) Supporting or carrying out (participating in) WQ assessments;

(d) participating in the development and application of GEMS/Water capacity building tools including to carry out regional/national training in water quality monitoring and analyses (*refer to guidance of capacity building WG*);

(e) Contributing to the Programme's fundraising efforts by carrying out resource mobilisation at the regional level; and organising WQ outreach activities. (UNEP's Regional Offices will closely follow up on activities of regional hubs and will assist the GPCU in coordination of activities at this level);

(f) Engaging in South–South dialogue and exchange as to build capacity across Regional Hubs.

Proposed criteria for a country/institution to qualify as a Regional Hub, i.e. a champion for the GEMS/Water implementation on regional scale

A country/institution that is able and willing to act as a regional/sub-regional champion and having most of the following criteria could be considered as a hub:

1. Having a critical mass of highly trained experts in water quality compared to other countries in the region/sub-region.

2. Being active in research in water quality/quantity related issues and provides or has access to well-equipped laboratory facilities with qualified man power and expertise.

3. Facilitating (or being actively involved in) regular water quality sampling, analysis and monitoring activities along harmonized QA data standards (*access to available monitoring data as well as promoting data sharing*).

4. Providing an own network of regional partners and ability to set regional priorities in the wider frame and mandate of GEMS/Water (*combine: Ability to promote and maintain relevant networks e.g. with UN partners and beyond such as Water Basin Authorities) (consider: regional/sub-regional drivers, SDG's context, interest/benefits for countries, etc.).*

5. Leading or facilitating regional capacity building trainings and WQ assessment projects in collaboration with the UNEP GEMS/Water Programme.

6. Ability to host a secretariat for regional GEMS Water.

7. Able to assist and partner with NFPs in the region to use/disseminate statistical tools/GEMStat and mobilize data flows.

8. Willingness as well as ensured financial contribution to work closely with UNEP Regional Offices and UNEP Live to foster and take responsibility for regular water quality/quantity status (and trend) reporting across various systems and scales.

UNITED
NATIONS

EP

UNEP/EA.1/INF/14

Distr.: General
16 May 2014

English only

United Nations Environment Assembly of the United Nations Environment Programme

United Nations Environment Assembly of the United Nations Environment Programme
First session
Nairobi, 23–27 June 2014
Items 5 and 6 of the provisional agenda*

Policy issues

Follow-up to and implementation of the outcomes of United Nations summits, in particular the United Nations Conference on Sustainable Development, and major intergovernmental meetings of relevance to the United Nations Environment Assembly

Proposed procedures for enhancing future assessment processes

Note by the secretariat**

Summary

The present note, to which reference is made in the reports of the Executive Director on the implementation of Governing Council decision 27/2 (UNEP/EA.1/2/Add.1) and on the state of the environment (UNEP/EA.1/4 and Add.1), sets out proposed procedures for enhancing future assessment processes facilitated by the United Nations Environment Programme. The note builds on a review of current best practices and includes proposed procedures relating to general principles; stakeholder engagement and selection of participants; policy relevance, legitimacy and scientific credibility; transparency; administrative processes; conflict of interests; inclusion of divergent viewpoints; and government and peer-review processes. Following feedback from the United Nations Environment Assembly at its first session, this draft set of proposed procedures will be developed further in consultation with the scientific community, nationally recognized experts and member States before being finalized ahead of the global intergovernmental multi-stakeholder consultation on the sixth Global Environment Outlook assessment (GEO-6), which is scheduled to be held in September 2014.

* UNEP/EA.1/1.
** Issued without formal editing.

K1401005 260514

I. Introduction

1. Assessment processes constitute the fundamental building blocks that support the UNEP core mandate to keep the world environment situation under review. They must, however, be underpinned by credible science, institutional networks, partnerships and multi-stakeholder collaborative mechanisms, which provide a number of support functions, such as catalysing data flows, facilitating access to and sharing of environmental information. Collectively, these structures and functions support various levels of decision-making, from global to local and set priorities for technology support, innovation, institutional redesign and capacity-building interventions.

2. Based on a review of best practices. this report provides a draft set of proposed procedures for strengthening future assessments and transparency safeguards, with an emphasis on: general principles; stakeholder engagement and selection of participants; policy relevance, legitimacy and scientific credibility; transparency; administrative processes; conflict of interest; inclusion of diverging viewpoints; and government and peer-review processes. Following feedback from UNEA, this draft set of proposed procedures will be developed further in consultation with the scientific community, nationally recognized experts and shared with Member States for comment before being finalized.

II. Background

3. The Rio+20 outcome document, "The future we want", emphasises in paragraph 76 (g) the promotion of the science-policy interface through inclusive, evidence-based and transparent scientific assessments, as well as access to reliable, relevant and timely data in areas related to the three dimensions of sustainable development, building on existing mechanisms, as appropriate.

4. Governing Council decision 27/11/I called upon UNEP to review best practices and develop a set of transparent procedures, particularly with regard to administrative processes, the selection of participants, the inclusion of diverging view points, as well as government and peer reviews to support a wide range of environmental assessments that the United Nations Environment Programme conducts in order to ensure that they are of the highest quality and have maximum impact.

5. It was stated that these procedures should be based on the knowledge and experience of nationally recognized experts and furthermore that current best assessment practices should be provided to Member States for comments. Those procedures relevant to the sixth Global Environment Outlook (GEO-6) assessment should be prioritized to feed into its preparation and should be provided to Member States for review and comment in time for the preparation of the sixth Global Environment Outlook assessment.

6. The Executive Director was also requested to ensure that the United Nations Environment Programme continues to build on the capacities developed during the GEO-5 process and other thematic and integrated assessments at the national, regional, subregional and global levels. This objective is to be accomplished by compiling and making available best practice assessment procedures with their different purposes, strengths and weaknesses, to all stakeholders.

III. Review of existing best practice

7. The last twenty years have seen the emergence of an increasing number of large scale global assessments that provide objective scientific information of relevance to policy-making. Through these assessments and their evaluations, there has been a continual learning process for assessment practitioners and an evolution of methodologies, procedures, guidance, and best practice. The draft set of procedures proposed in this report has been largely drawn from Harvard's Global Environmental Assessment (GEA) Project[1] and the following four global science policy processes.

8. The **Global Environment Outlook** (GEO): UNEP has produced a series of GEO reports which have analysed environmental state and trends at the global, regional and subregional scales, described plausible outlooks for various time frames and formulated policy options. Each GEO report builds on the assessment findings of its predecessor and also draws from lessons learned based on evaluations as well as global processes such as the IPCC ad MA. Since 1997, UNEP has published five editions of the GEO. Substantial guidance has been produced to support the development of the GEO series, as well as an Integrated Environmental Assessment (IEA) Training Manual on how to carry out an integrated environmental assessment, including best practices, which has been applied in numerous cases at national, subregional and regional levels around the world.[2]

[1] See: http://www.hks.harvard.edu/gea.

[2] See: http://www.unep.org/geo/GEO_assessment.asp.

9. The **Millennium Ecosystem Assessment** (MA) was carried out between 2001 and 2005 to assess the consequences of ecosystem change for human well-being. Following this assessment, experts published a book providing insights into assessment processes. *Ecosystems and Human Well-being - A Manual for Assessment Practitioners (2010)*[3] contains numerous case studies of best practice, offers a practical guide for undertaking ecosystem assessments and includes tools and approaches that can assess options for better managing ecosystems.

10. The **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services** (IPBES) was established in April 2012, and currently has 115 Member States. The Platform is an independent, intergovernmental body, open to all member countries of the United Nations. The second session of the Platform's Plenary (IPBES-2) adopted a number of key decisions including procedures for the nomination and selection of the Multidisciplinary Expert Panel (MEP) which has informed the development of the best practices regarding selection of participants presented in this report.

11. The **Intergovernmental Panel on Climate Change** (IPCC) undertakes complex scientific assessments in the area of climate change and has developed significant guidance in this regard. In addition, following some sustained criticism and a heightened level of public scrutiny of the Fourth Assessment Report, the United Nations and the IPCC asked the InterAcademy Council (IAC) to assemble a committee to review the processes and procedures of the IPCC and make recommendations for change that would enhance the authoritative nature of the IPCC reports. The recommendations can be found in the report *Climate Change Assessments – Review of the Processes and Procedures of the IPCC*.[4]

IV. Proposed procedures for GEO and future assessments

A. General principles

12. An assessment should follow an open and transparent process that is multi-scaled and multidisciplinary, building on previous and ongoing assessment work to avoid duplication, and ensuring scientifically credible and policy relevant findings.

13. Assessment data and information should be processed into knowledge products and made available in the public domain to the extent possible, taking into account the UNEP access to information policy.

14. The assessment should engage the best available scientific and policy expertise, taking into account disciplinary, geographic and gender balance through a merit-based and transparent nomination and selection process.

15. The assessment procedures should assist authors from developing countries and countries with economies in transition with participation, for example with access to scientific literature.

B. Stakeholder engagement and selection of participants

16. The aim of a multi-stakeholder assessment process is to promote better decision-making by ensuring that the views of the main actors concerned about a particular issue are heard and integrated at all stages through dialogue and consensus building. The process takes the view that everyone involved has a valid view and relevant knowledge and experience to bring to the decision-making. Therefore effective stakeholder engagement leads to a greater sense of ownership of the assessment and up take of the findings.

17. UNEP has developed a policy for engagement with Major Groups and Stakeholders (MGS) along the following principles: (a) acknowledgement of the inter-governmental nature of UNEP processes; (b) access to information; (c) transparency and accountability for mutual benefit; (d) Respect for diversity of views and respect for self-organisation; and (e) improvements on current engagement practices.

18. With regard to GEO-6 and UNEP regional and subregional assessments, the following procedures and processes for engaging stakeholders and selecting participants are proposed:

(a) GEO-6 and UNEP regional and subregional assessments will engage a wide range of global and regional and subregional partners, reflecting an appropriate balance of developed and developing country participants, in the assessment as authors, experts, peer-reviewers and advisers;

[3] See http://www.unep-wcmc.org/medialibrary/2010/10/31/90af3045/EcosystemsHumanWellbeing.pdf.

[4] See http://reviewipcc.interacademycouncil.net/report/Climate%20Change%20Assessments,%20Review%20of%20the%20Processes%20&%20Procedures%20of%20the%20IPCC.pdf.

This should include governments, United Nations agencies, funds and programmes and other international organizations, scientific institutions, centres of excellence, NGOs, indigenous peoples' networks and the private sector;

(b) UNEP will broaden and expand the participation in its assessments to deliver more "inclusive knowledge generation". It will do this through working with existing, and establishing new, Communities of Practice around topics relevant to the assessment. A Communities of Practice is a collective of stakeholders who collaborate together to generate knowledge around issues of importance to them. They are guided by moderators who may also represent them in other contexts;

(c) A GEO-6 Communities of Practice will be established to contribute data, information and analysis to inform the assessment based on the mandate provided through the Global Intergovernmental and Multi-stakeholder Consultation. The Communities of Practice will be comprised of government nominated experts, experts nominated by stakeholders and other relevant existing Communities of Practice. The moderators will be selected by consensus between the Communities of Practice and the GEO-6 Global Scientific Advisory Panel (see subpara. (j) below). Clear terms of reference will be developed for the moderators and the Communities of Practice. The Secretariat will provide technical support for the on-line platform and substantive support to the moderators. The Communities of Practice will help to identify data and information to inform the assessment, and participate in the peer review and outreach of the findings. Governments will also be invited to review the global assessment;

(d) Using the data/information and knowledge generated through the Communities of Practice, the GEO-6 assessment will be conducted by a group of experts, comprising Coordinating Lead Authors, Lead Authors, Contributing Authors and review editors. These experts will be selected by the Global Scientific Advisory Panel in consultation with the Communities of Practice moderators and UNEP/GEO Secretariat. The Scientific Advisory Panel will select the experts considering the following:

(i) The required range of scientific, technical and socioeconomic expertise;

(ii) Geographical representation, with appropriate representation of experts from developing and developed countries and countries with economies in transition;

(iii) The diversity of knowledge systems that exist;

(iv) Gender balance;

(e) A similar process will be developed for all the regions where UNEP is supporting regional and subregional assessments to feed into GEO-65. Each regional assessment process will be supported by a Regional Scientific Advisory Panel to ensure scientific credibility and overall quality of the regional assessments. Five Communities of Practice will be established and moderators selected by consensus between the Communities of Practice and the Regional Scientific Advisory Panel. As with the GEO-6 Communities of Practice it will comprise of government nominated experts, experts nominated by stakeholders and other relevant existing Communities of Practice. The Communities of Practice will help to identify data and information to inform the assessment, and participate in the peer review and outreach of the findings. Governments will also be invited to review the regional assessments;

(f) The regional and subregional assessments will be conducted by a group of experts, comprising Coordinating Lead Authors, Lead Authors, Contributing Authors and Review Editors. These experts will be selected by the Regional Scientific Advisory Panels in consultation with the Communities of Practice moderators. Every effort will be made to engage experts from the relevant region on the author teams for the assessments that deal with specific regions, but experts from other regions can be engaged when they can provide an important contribution to the assessment;

(g) All experts will be nominated and selected to join in an open and transparent manner drawing on the IPCC nomination process. The nominated experts will be engaged by the UNEP Secretariat on the basis of their expertise, with due consideration of gender and regional balances;

(h) Two advisory bodies will be recommended for GEO-6. A High Level Intergovernmental and Stakeholder Group with appropriate regional representation will be established to ensure policy relevance of the assessment and to prepare the Summary for Policy Makers. The following criteria will be taken into account in nominating and selecting members of the High Level Intergovernmental and Stakeholder Group:

[5] Africa, Asia and the Pacific, Latin America and the Caribbean, Western Asia and Eastern Europe, Caucasus and Central Asia.

(i) Expertise in international policy agenda;

(ii) Experience on high level panels in relation to environmental policy and sustainable development.

(i) The High Level Intergovernmental and Stakeholder Group will be co-chaired by one representative from a developed country and one representative from a developing country, or from a country with an economy in transition, and will be regionally and gender balanced;

(j) A Global Scientific Advisory Panel will be established to guide the assessment process and to ensure scientific credibility and overall quality of GEO-6. It will comprise 2 experts from each region and up to 6 additional global experts. The following criteria will be taken into account in nominating and selecting members of the Scientific Advisory Panel:

(i) Scientific expertise with regard to both natural and social sciences and traditional and local knowledge;

(ii) Scientific, technical or policy expertise and knowledge of the main elements of the assessment;

(iii) Experience in communicating, promoting and incorporating science into policy development processes;

(iv) Proven ability to work in international scientific and policy processes;

(k) The focus and priorities of GEO-6 will be determined by the Global Intergovernmental and Multi-stakeholder Consultation scheduled for September 2014. The meeting will also agree on the scope, objectives and process of GEO-6. It will include participation from Governments, UNEP Major Groups and Stakeholders, United Nations agencies, funds and programmes;

(l) The focus and priorities of the regional assessments will be agreed at the proposed Regional Environmental Information Network meetings which will engage governments and other stakeholders. The regional priorities, which will be selected from regional priorities established by on-going regional fora, will also inform GEO-6.

C. Policy Relevance, legitimacy and scientific credibility

19. Certain attributes of the assessment process are crucial for building an effective link between science and policy. These include relevance, legitimacy and credibility. These attributes make it more likely that the knowledge contained in an assessment will have influence.

20. **Relevance** (salience) is intended to reflect the ability of an assessment and its findings to address the particular concerns and knowledge requirements of a user. An assessment is relevant if the user is aware of it and it provides knowledge appropriate to support behavioural change or decision-making.

21. The process must identify key target audiences (policy-makers, managers and sectoral users, public and media) in the planning stages and ensure effective consultation and communication with them throughout the process so that final products are meaningful and owned by each audience. The process also determines how to engage decision-makers in dialogue over its findings and recommendations while ensuring an appropriate "boundary" between the experts and decision makers.

22. Policy relevance refers to the degree of applicability and practicality of the assessment findings for policy-makers and recommendations to policy-making processes. In other words, this term refers to how effectively the assessment findings help policy-makers arrive at informed decisions.

23. GEO-6 will result in an assessment report and a Summary for Policy Makers. The Summary for Policy Makers will accurately reflect the key policy messages arising from the findings of the assessment. It will be drafted by the High Level Intergovernmental and Stakeholder Group and presented to the Open Ended Committee of Permanent Representatives in March 2016 for negotiation and endorsement. The Summary for Policy Makers will be presented to UNEA 2 in June 2016.

24. **Legitimacy** is a measure of the perceived fairness of an assessment. A lack of legitimacy is evident, for instance, when one group questions the product or process of an assessment because it feels that its input was not considered, or when some nations believe that data sources or modelling approaches were dominated by experts from other regions.

25. Legitimacy is acquired through stakeholder involvement in its design and review, the inclusion of local experts and traditional knowledge of the environment, and reflecting different gender perspectives. The more stakeholders buy into a process and see it as their process responding to their

needs and concerns, the more they will pay attention to the results and take action or change their behaviour accordingly.

26. The legitimacy of the assessment is established if all interested parties are satisfied that their concerns and contributions were taken into account, if the process has been conducted in a transparent manner and if assessment products are widely available. It is the process which establishes the modalities for interested parties to contribute to the design of an assessment in the planning stages and to air their concerns throughout the process. The process must also agree on clearly-articulated responsibilities for those who participate, and provide for balance among the experts. It must ensure that procedures are transparent, commonly agreed upon and that they are followed. If the process includes efforts to strengthen the capacity of all interested groups to participate, this also enhances legitimacy.

27. **Credibility** refers to the perceived scientific and technical soundness of an assessment. Even if an assessment captures the attention of relevant audiences, its influence still depends on whether, and which, audiences consider the knowledge assembled to be valid.

28. Scientific credibility is also influenced by the extent to which the research, data and information on which the assessment will draw upon is recognized as a reliable source, and the extent to which the process used to assess and evaluate the reliability of information for inclusion into the assessment adheres to scientific principles.

29. The Global and Regional Science Advisory Panels will be responsible for ensuring the scientific credibility of the global and regional assessments. The panels will be responsible for selecting Coordinating Lead Authors, Lead Authors, Contributing Authors and Review Editors for the assessment; and ensuring the guidelines for scientific credibility are adhered to.

D. Transparency

30. Transparency is an important principle for building and promoting trust between the public, the scientific community, and governments.

31. Clear indications of how to access material for consideration in the assessment report, starting from the first draft, should be included in the contributions by authors and experts. For material available in electronic format only, the location where such material may be accessed and a soft copy of such material should be sent to the Secretariat for archiving.

32. Review processes support especially the credibility and relevancy of the assessment. Consultation processes support both legitimacy and relevancy of the assessment. In this regard, the Communities of Practice will support an "open method of consultation and dialogue" which involves continuous sharing of the underpinning data and information being used by chapter authors and which would allow data/information holders to check and verify.

33. Unpublished material, and outputs deriving from indigenous and local knowledge, may be used in assessments, provided that their inclusion is fully justified in the context of the assessment process and that their unpublished status is specified. Such materials will need to be made available to the review process and their sources identified by the report.

34. The final draft of a report should credit all report co-chairs, Coordinating lead authors, Lead Authors, Contributing Authors, reviewers and review editors and other contributors, as appropriate, by name and affiliation.

E. Administrative processes

35. The Secretariat is the operational unit that remains active between assessment reports, and thus provides important institutional continuity and centralized administrative support. Administrative processes aim at ensuring transparency and ensuring clear assignment of roles and responsibilities throughout the assessment process, as well as facilitating the delivery of the project through coordination, communication and financial management.

36. Possible administrative elements where UNEP could develop procedures to improve transparency include:

(a) Overall management and oversight including activity schedule, key meetings, events and production milestones;

(b) Internal operational structures and roles and responsibilities;

(c) Roles and responsibilities of the various entities to be involved, including the identification of strategic partners in delivering the activity;

(d) Means by which the procedures for the implementation of the work programme will be carried out to ensure effective peer review, quality assurance and transparency;

(e) Any capacity-building interventions that may be required to deliver the activity;

(f) Any communication and outreach activities that might be appropriate for the specific deliverable; and

(g) Knowledge management to support assessments.

F. Conflict of interest policy

37. UNEP has adopted codes of conduct that address conflict of interest issues for their staff. However UNEP has not established conflict of interest or disclosure policies for experts who serve on UNEP assessment teams. Other scientific assessments, such as the Millennium Ecosystem Assessment and the Global Biodiversity Assessment, have neither conflict of interest nor disclosure policies for their authors.

38. Because the individuals involved in the assessment process carry the burden and responsibility of maintaining the public's trust, it is important for all involved to act with transparency and integrity and to abide by appropriate codes of conduct. Public trust in science and the selection process also depends on effective communication. A conflict of interest policy will be developed as part of the final assessment procedures.

G. Inclusion of diverging viewpoints

39. Identifying science and policy related contentious issues, where different viewpoints exist, will be the responsibility of the Coordinating Lead Authors, as well as the Reviewer Editors.

40. Assessments should describe different, possibly controversial, scientific, technical and socioeconomic views on a given subject, particularly if they are relevant to the policy debate.

41. Coordinating Lead Authors and Lead Authors should explicitly document in the assessment where a range of viewpoints around data, science and policies have been considered, and Coordinating Lead Authors and Review Editors should satisfy themselves that due consideration was given to properly document alternative views.

42. In preparing the first draft of an assessment report and at subsequent stages of revision after review, authors should clearly identify disparate views for which there is significant scientific, technical or socio economic support, together with the relevant arguments. Sources of uncertainty should be clearly identified, listed and quantified where possible. The implications for decision-making of the findings, including knowledge gaps, contrasting evidence and minority opinions, should be explicitly discussed.

43. Coordinating Lead Authors are required to record views that cannot be reconciled with a consensus view but that are, nonetheless, scientifically, technically or socioeconomically valid. Consensus does not imply a single view, but can incorporate a range of views based on the evidence.

44. If necessary, with guidance from the Scientific Advisory Panel, the assessment report may include in a footnote the differing views expressed in comments submitted by Governments during their final review of the document if these are not otherwise adequately reflected in the paper.

H. Peer review

45. A peer review process is a means for ensuring the quality and relevance of the technical work. The review process also provides feedback on interim findings to users, and thus forms part of the on-going strategy of engagement and communication with users.

46. Transparent and rigorous peer review is necessary to achieve the highest scientific credibility possible. Three principles govern the review process: first, the reports should represent the best possible scientific, technical and socioeconomic data and information and be as balanced and comprehensive as possible. Second, as many experts as possible should be involved in the review process, ensuring representation of independent experts (i.e., experts not involved in the preparation of the chapter they are to review) from all countries. Third, the review process should be balanced, open and transparent and record the response to each major review comment.

47. The Communities of Practice will support a more inclusive peer review due to the greater number of participants and breadth of knowledge. Peer reviews using the Communities of Practice will be more transparent than traditional methods and allow stakeholders to openly comment and share opinions on data, information and assessments, as well as comment on other stakeholder's comments.

48. A targeted and effective process for responding to reviewer comments is an important requirement. In such a process, Review Editors would prepare a written summary of the most significant issues raised by reviewers shortly after review comments have been received. Authors would be required to provide detailed written responses to the most significant review issues identified by the Review Editors, abbreviated responses to all non-editorial comments, and no written responses to editorial comments.

49. In order to improve transparency, legitimacy and scientific credibility of the assessment, peer reviews of all outputs, including the regional, subregional and global assessments will be undertaken through intergovernmental and multi-stakeholder processes.

50. As much environmental information exists in non-peer reviewed forms the use of grey cannot be ignored, but a clearer definition of grey literature is needed. Grey literature includes government reports, technical reports, conference proceedings, statistics, observational data sets, and model output., which are not intended to be scientific publications, yet which contain relevant data and information, e.g. on national environmental trends or national reports to MEAs Secretariats. Another important source of information is provided by NGOs, many of whom compile very credible reports and statistics, but that are not published in journals.

51. Consideration of grey literature should be taken on a case-by-case basis, and should be accessible on the UNEP Live platform.

V. Conclusion

52. There is a continuous need for UNEP to review and strengthen its procedures and guidance in relation to the assessment processes it undertakes or facilitates, resulting from feedback from governments and stakeholders and through formal evaluations of assessments both internal to UNEP and those conducted by external entities.

53. UNEP proposes to develop this draft set of procedures further in consultation with the scientific community, nationally recognized experts and shared with Member States for comment before being finalized ahead of the Global Intergovernmental Multi-stakeholder Consultation on GEO-6 that is scheduled for September 2014.

UNITED NATIONS

EP

UNEP/EA.1/INF/15

Distr.: General
16 May 2014

English only

United Nations Environment Assembly of the United Nations Environment Programme

United Nations Environment Assembly of the United Nations Environment Programme
First session
Nairobi, 23–27 June 2014
Item 5 of the provisional agenda*
Policy issues

Report of the second session of the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

Note by the secretariat

Pursuant to Governing Council decision 27/5 on coordination across the United Nations system, including the Environment Management Group, the report of the second session of the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES/2/17), held in Antalya, Turkey, from 9 to 14 December 2013, is available from www.ipbes.net/images/IPBES-2-17%20-%20En.pdf.

* UNEP/EA.1/1.

K1401006 260514

UNITED
NATIONS

EP

UNEP/EA.1/INF/16

Distr.: General
16 May 2014

English only

**United Nations
Environment Assembly of the
United Nations Environment
Programme**

**United Nations Environment Assembly of the
United Nations Environment Programme
First session**
Nairobi, 23–27 June 2014
Items 5 and 6 of the provisional agenda*

Policy issues

Follow-up to and implementation of the outcomes of United Nations summits, in particular the United Nations Conference on Sustainable Development, and major intergovernmental meetings of relevance to the United Nations Environment Assembly

Supplemental information relating to the consolidation of headquarters functions

Note by the secretariat

The annexes to the present note provide information to supplement and support the information contained in the report of the Executive Director on the consolidation of headquarters functions (UNEP/EA.1/2/Add.5). The annexes have not been formally edited.

* UNEP/EA.1/1.

K1401012 260514

Annex I

General Assembly resolution 68/215

For the text of resolution 68/215, see *Official Records of the General Assembly, Sixty-eighth Session, Supplement No. 49*, vol. I.

Annex II

Expert Advisory Group methodology

The following steps were identified and followed for developing a possible scenario, assessing its broad implications and making recommendations for progressively consolidating headquarters functions at Nairobi:

i. Compilation of data concerning UNEP's current strategic presence network. This includes data on staffing per duty station and roles, and the identification of responsibilities of offices at each location. Data were also compiled to identify relevant trends with respect to changes in the location of the UNEP Secretariat workforce from 2005 to-date.

ii. A review of prior studies and policies that address/have addressed UNEP's strategic presence.

iii. A desk review of private and public sector definitions of "headquarters" and "headquarters functions".

iv. A comparative review of selected United Nations organizations with respect to their geographic spread and the roles and functions of offices away from headquarters. Data were compiled for the following organizations: Food and Agricultural Organization (FAO), International Labour Organization (ILO), United Nations Development Organization (UNDP), United Nations Industrial Development Organization (UNIDO), World Trade Organization (WTO), and World Intellectual Property Organization (WIPO). The areas covered in this review were:

- Geographic location, functions and roles of offices away from headquarters;
- Mandates, strategic priorities and other criteria influencing decisions concerning the number, type and geographic location of offices;
- Rationale for any recent or on-going changes in the geographic location of offices, and identification of trends within the UN concerning concentration of staff or functions in locations away from headquarters; and
- Identification of best practices (for example, improved cost-effectiveness of operational services) or practices to be avoided in relation to location of offices.

v. Formulation of a definition of headquarters functions and identification of such functions currently performed at duty stations different from Nairobi.

vi. Identification of possible options and assessment of the implications of progressively relocating such functions to Nairobi. The assessment was based on the assumptions, definition and criteria outlined below.

vii. Formulation of a possible scenario for the consolidation of headquarters functions, with broad cost implications and indications on the key steps and requirements for its implementation.

Annex III

Termination Indemnity (annex III to the staff regulations)

Completed years of service	*Months of gross salary, less staff assessment, where applicable*		
	Temporary appointments exceeding six months	*Fixed-term appointments*	*Continuing appointments*
Less than 1	One week for each month of uncompleted service subject to a minimum of six weeks' and a maximum of three months' indemnity pay	One week for each month of uncompleted service subject to a minimum of six weeks' and a maximum of three months' indemnity pay	Not applicable
1			Not applicable
2			3
3			3
4			4
5			5
6		3	6
7		5	7
8		7	8
9	Not applicable	9	9
10		9.5	9.5
11		10	10
12		10.5	10.5
13		11	11
14		11.5	11.5
15 or more		12	12

Annex IV

Repatriation grant calculations (annex IV to the staff regulations)

Years of continuous service away from home country	*Staff member with a spouse or dependent child at time of separation*	*Staff member with neither a spouse nor dependent child at time of separation*	
		Professional and higher categories	*General Service category*
	Weeks of gross salary, less staff assessment, where applicable		
1	4	3	2
2	8	5	4
3	10	6	5
4	12	7	6
5	14	8	7
6	16	9	8
7	18	10	9
8	20	11	10
9	22	13	11
10	24	14	12
11	26	15	13
12 or more	28	16	14

Annex V

Standard annual salaries

Standard D and P annual salary figures for various duty stations

Duty Station	*D-2*	*D-1*	*P-5*	*P-4*	*P-3*	*P-2*
Geneva	318 900	292 800	261 200	220 800	184 500	145 400
Nairobi	265 500	244 500	216 300	188 600	152 900	125 200
Paris	297 900	276 700	249 700	214 700	181 600	122 040

Note: Use of 2013 standard salary costs without inflationary factor. Paris duty station does not have published standard salary figures so standard costs for Geneva, adjusted for lower average post adjustment, have been applied.

Standard General Service annual salary figures for various duty stations

Duty station	*Standard annual salary cost*
Nairobi	45 100
Geneva	139 400
Paris	105 116

UNITED
NATIONS

EP

UNEP/EA.1/INF/17

Distr.: General
9 June 2014

English only

United Nations
Environment Assembly of the
United Nations Environment
Programme

United Nations Environment Assembly of the United Nations Environment Programme
First session
Nairobi, 23–27 June 2014
Item 7 of the provisional agenda*

Budget and programme of work for the biennium 2016–2017 and the Environment Fund and other budgetary matters

Voluntary indicative scale of contributions for the biennium 2014–2015

Note by the Executive Director

Summary

The present note provides information on the voluntary indicative scale of contributions for the biennium 2014–2015 and how the scale has been adapted in the light of the universal membership of the United Nations Environment Programme, as referred to in paragraph 26 of Governing Council decision 27/13.

* UNEP/EA.1/1.

K1401180 170614

I. History of the establishment and application of the voluntary indicative scale of contributions

1. In its decision SS.VII/1, the Governing Council of the United Nations Environment Programme (UNEP), at its seventh special session, held in Cartagena, Colombia, in 2002, adopted the report of the Open-ended Intergovernmental Group of Ministers or Their Representatives on International Environmental Governance, which was set out in the appendix to the decision.

2. In paragraphs 16 and 17 of its report, the Open-ended Working Group stated that all Member States of the United Nations and members of its specialized agencies should contribute financially to UNEP and, towards that end, called for the establishment of a voluntary indicative scale of contributions to broaden the base of contributions and to enhance predictability in the voluntary financing of the Environment Fund. The voluntary scale was to be developed taking into account, among other things, the United Nations scale of assessment and the following factors:

(a) A minimum indicative rate of 0.001 per cent;

(b) A maximum indicative rate of 22 per cent;

(c) A maximum indicative rate for the least developed countries of 0.01 per cent;

(d) The economic and social circumstances of the Member States, in particular those of developing countries and countries with economies in transition;

(e) Provisions to allow for any Member State in a position to do so to increase its level of contributions over and above its current level.

3. The Open-ended Working Group confirmed, furthermore, that all contributions to the Fund would remain voluntary and each State reserved the right to determine whether or not it wished to contribute voluntarily to the Fund. However, all Member States, taking into account their economic and social circumstances, would be encouraged to contribute to the Environment Fund either on the basis of the indicative scale of contributions or on the basis of any of the following:

(a) Biennial pledges;

(b) United Nations scale of assessments;

(c) Historical level of contributions;

(d) Any other basis identified by the Member State;

4. In response to the Council's adoption of the Working Group's report, the Executive Director of UNEP launched a pilot phase of the voluntary indicative scale of contributions for one year, 2003. During the same year, the guiding principles and criteria for the voluntary indicative scale of contributions were further elaborated and presented to the Governing Council at its twenty-second session. The guiding principles and criteria included a call to all the countries that were paying equal to or above the United Nations scale to maintain their high levels of contributions and to countries in a position to do so to consider making higher payments over and above their level of contribution. All the developed countries, countries with economies in transition and many developing countries that were contributing below the United Nations scale were invited to increase their contributions gradually and pay closer to the United Nations scale and the previous historical high level of contributions.

5. Following the pilot phase, the scale was applied in the biennium 2004–2005, and was subsequently revised for the bienniums 2006–2007, 2008–2009, 2010–2011 and 2012–2013 at the request of the Governing Council. The Council continued to reiterate the need for stable, adequate and predictable financial resources for UNEP.

6. In 2008, the Secretary-General acknowledged the success of the initial result of introducing the voluntary indicative scale of contributions (see A/63/201).

II. Recent commitments by Member States to increasing funding for United Nations Environment Programme, in particular for the Environment Fund

In its resolution 67/213, the General Assembly decided to strengthen and upgrade UNEP in the manner set out in subparagraphs (a) to (h) of paragraph 88 of the outcome document of the United Nations Conference on Sustainable Development, held in Rio de Janeiro, Brazil, in June 2012. As part of that decision, Member States were requested to provide secure, stable, adequate and increased financial resources to UNEP both from the regular budget and from voluntary contributions.

7. Following the adoption of the resolution, at its twenty-seventh session and its first universal session, held in February 2013, the Governing Council, in paragraph 19 of its decision 27/2, stressed the need by no later than 2016 to implement the provisions of paragraph 88 (b) of the outcome document.

8. In its resolution 67/226 on the quadrennial comprehensive policy review of operational activities for development of the United Nations system, the General Assembly urged countries to substantially increase their voluntary contributions to the core budgets of the United Nations funds, programmes and specialized agencies (the Environment Fund in the case of UNEP) and contribute on a multi-year basis in a sustained and predictable manner

9. In paragraph 26 of its decision 27/13, the Governing Council noted the positive effect of the voluntary indicative scale of contributions to broaden the base of contributions to, and to enhance predictability in, the voluntary financing of the Environment Fund, and requested the Executive Director to adapt the voluntary indicative scale of contributions in the light of the universal membership of UNEP, in accordance with decisions SS.VII/1 and any subsequent decisions.

10. Furthermore, in paragraph 27 of the same decision, the Governing Council requested the Executive Director in his efforts to mobilize resources for UNEP to take action to strengthen and broaden the donor base of the Environment Fund.

III. Application of the 2014–2015 voluntary indicative scale of contributions in support of the commitments made by Member States

11. The provisions of the resolutions of the General Assembly and the decisions of the Governing Council on strengthening UNEP funding, in particular for its Environment Fund, were applied to the 2014–2015 programme of work and budget of UNEP. In accordance with Governing Council decision 27/13, the Environment Fund, which is the primary source of non-earmarked funding for UNEP, is to receive contributions worth $110 million in 2014 and $135 million in 2015.

12. The voluntary indicative scale of contributions for 2014–2015 was adjusted accordingly:

(a) The decision taken in Cartagena at the seventh special session to take into account the United Nations scale of assessments and the economic and social circumstances of member States in the preparations of the scale was brought to the fore in the 2014–2015 scale: member States are being requested to contribute at least on the same percentage basis as their United Nations assessed scale level for 2013–2015, which reflects their current status of economic and social development since 2002;

(b) Member States already contributing at or above the United Nations scale are requested to retain their high level of contribution;

(c) Member States that are contributing below their highest ever payment are encouraged to strive to return to that level of funding.

13. The Executive Director notified each member State of their suggested level of contribution according to the voluntary indicative scale of contributions between August and October 2013. Following the responses received and further consultations with member States, the scale was finalized in early 2014 and is set out in the annex to the present note. Nevertheless, the actual amount of contribution to be provided by each member State remains at their discretion.

14. Applying the principles articulated above would require many member States to contribute to the Environment Fund many times more than in prior years. Therefore, where the requested increase is so substantive that it may not be rapidly achieved, the Executive Director has encouraged a commitment to gradually increasing the contributions towards the level of the voluntary scale, which

would provide a strong statement of support to UNEP in line with the outcome of the United Nations Conference on Sustainable Development. Furthermore, recognizing the current global financial situation, these increases are expected to be achieved mainly through a shift from earmarked contributions to the Environment Fund.

15. In addition to efforts by member States to increase their level of funding to the Environment Fund in accordance with the voluntary indicative scale of contributions, they are encouraged to work with the UNEP secretariat and other member States to implement all the aspects of the UNEP funding strategy, which was developed at the request of and in close consultation with member States in 2013 and approved by the Executive Director in January 2014. The funding strategy emphasizes the need for a shift towards an increase in non-earmarked funding, a widened base for contributions and more partnerships that catalyse resources and results at the global, regional and national levels. It also seeks an increased return on investment and accountability of the Programme as well as recognizing the need for better communication.

16. Universal membership requires member States to take global responsibility for the stable, secure, adequate and increased funding required to enable UNEP to respond effectively to their call for it to fulfil its role as the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system and serves as an authoritative advocate for the global environment. Achieving this will require a collective effort and a continued commitment by the UNEP secretariat to continuously demonstrating efficiency and results.

Annex

Voluntary indicative scale of contributions 2014–2015

(United States dollars)

	2014		2015	
Country[a]	*United States dollars (budget: $110 million)*	*Percentage of budget*	*United States dollars (budget: $135 million)*	*Percentage of budget*
Afghanistan	5 500	0.005	6 750	0.005
Albania	11 000	0.010	13 500	0.010
Algeria	150 700	0.137	184 950	0.137
Andorra	39 474	0.036	39 474	0.029
Angola	11 000	0.010	13 500	0.010
Antigua and Barbuda	2 200	0.002	2 700	0.002
Argentina	475 200	0.432	583 200	0.432
Armenia	7 700	0.007	9 450	0.007
Australia	2 281 400	2.074	2 799 900	2.074
Austria	877 800	0.798	1 077 300	0.798
Azerbaijan	44 000	0.040	54 000	0.040
Bahamas	18 700	0.017	22 950	0.017
Bahrain	42 900	0.039	52 650	0.039
Bangladesh	11 000	0.010	13 500	0.010
Barbados	8 800	0.008	10 800	0.008
Belarus	61 600	0.056	75 600	0.056
Belgium	5 241 379	4.765	5 241 379	3.883
Belize	1 100	0.001	1 350	0.001
Benin	3 300	0.003	4 050	0.003
Bhutan	1 450	0.001	1 780	0.001
Bolivia (Plurinational State of)	9 900	0.009	12 150	0.009
Bosnia and Herzegovina	18 700	0.017	22 950	0.017
Botswana	18 700	0.017	22 950	0.017
Brazil	3 227 400	2.934	3 960 900	2.934
Brunei Darussalam	28 600	0.026	35 100	0.026
Bulgaria	51 700	0.047	63 450	0.047
Burkina Faso	5 646	0.005	5 646	0.004
Burundi	1 100	0.001	1 350	0.001
Cabo Verde	1 100	0.001	1 350	0.001
Cambodia	4 400	0.004	5 400	0.004
Cameroon	13 200	0.012	16 200	0.012
Canada	3 282 400	2.984	4 028 400	2.984
Central African Republic	1 100	0.001	1 350	0.001
Chad	2 200	0.002	2 700	0.002
Chile	367 400	0.334	450 900	0.334
China	5 662 800	5.148	6 949 800	5.148
Colombia	284 900	0.259	349 650	0.259
Comoros	1 100	0.001	1 350	0.001
Congo	5 500	0.005	6 750	0.005
Costa Rica	41 800	0.038	51 300	0.038
Côte d'Ivoire	12 100	0.011	14 850	0.011
Croatia	138 600	0.126	170 100	0.126
Cuba	75 900	0.069	93 150	0.069
Cyprus	51 700	0.047	63 450	0.047
Czech Republic	424 600	0.386	521 100	0.386
Democratic People's Republic of Korea	6 600	0.006	8 100	0.006

	2014		2015	
Country[a]	*United States dollars (budget: $110 million)*	*Percentage of budget*	*United States dollars (budget: $135 million)*	*Percentage of budget*
Democratic Republic of the Congo	3 300	0.003	4 050	0.003
Denmark	5 271 920	4.793	5 271 920	3.905
Djibouti	1 100	0.001	1 350	0.001
Dominica	1 100	0.001	1 350	0.001
Dominican Republic	49 500	0.045	60 750	0.045
Ecuador	48 400	0.044	59 400	0.044
Egypt	147 400	0.134	180 900	0.134
El Salvador	17 600	0.016	21 600	0.016
Equatorial Guinea	11 000	0.010	13 500	0.010
Eritrea	1 100	0.001	1 350	0.001
Estonia	44 000	0.040	54 000	0.040
Ethiopia	11 000	0.010	13 500	0.010
Fiji	4 481	0.004	4 481	0.003
Finland	4 395 180	3.996	4 395 180	3.256
France	6 152 300	5.593	7 550 550	5.593
Gabon	22 000	0.020	27 000	0.020
Gambia	1 100	0.001	1 350	0.001
Georgia	7 700	0.007	9 450	0.007
Germany	9 696 293	8.815	9 696 293	7.182
Ghana	15 400	0.014	18 900	0.014
Greece	701 800	0.638	861 300	0.638
Grenada	1 100	0.001	1 350	0.001
Guatemala	29 700	0.027	36 450	0.027
Guinea	1 100	0.001	1 350	0.001
Guinea-Bissau	1 100	0.001	1 350	0.001
Guyana	1 100	0.001	1 350	0.001
Haiti	3 300	0.003	4 050	0.003
Honduras	8 800	0.008	10 800	0.008
Hungary	292 600	0.266	359 100	0.266
Iceland	38 000	0.035	38 000	0.028
India	732 600	0.666	899 100	0.666
Indonesia	380 600	0.346	467 100	0.346
Iran (Islamic Republic of)	391 600	0.356	480 600	0.356
Iraq	74 800	0.068	91 800	0.068
Ireland	470 000	0.427	564 300	0.418
Israel	435 600	0.396	534 600	0.396
Italy	4 892 800	4.448	6 004 800	4.448
Jamaica	12 100	0.011	14 850	0.011
Japan	11 916 300	10.833	14 624 550	10.833
Jordan	24 200	0.022	29 700	0.022
Kazakhstan	133 100	0.121	163 350	0.121
Kenya	30 000	0.027	30 000	0.022
Kiribati	1 100	0.001	1 350	0.001
Kuwait	300 300	0.273	368 550	0.273
Kyrgyzstan	2 200	0.002	2 700	0.002
Lao People's Democratic Republic	2 200	0.002	2 700	0.002
Latvia	51 700	0.047	63 450	0.047
Lebanon	46 200	0.042	56 700	0.042
Lesotho	9 975	0.009	9 975	0.007
Liberia	1 100	0.001	1 350	0.001
Libya	156 200	0.142	191 700	0.142
Liechtenstein	9 900	0.009	12 150	0.009

Country[a]	2014 United States dollars (budget: $110 million)	2014 Percentage of budget	2015 United States dollars (budget: $135 million)	2015 Percentage of budget
Lithuania	80 300	0.073	98 550	0.073
Luxembourg	660 313	0.600	660 313	0.489
Madagascar	3 300	0.003	4 050	0.003
Malawi	2 200	0.002	2 700	0.002
Malaysia	309 100	0.281	379 350	0.281
Maldives	2 000	0.002	2 455	0.002
Mali	4 400	0.004	5 400	0.004
Malta	17 600	0.016	21 600	0.016
Marshall Islands	1 100	0.001	1 350	0.001
Mauritania	2 200	0.002	2 700	0.002
Mauritius	14 300	0.013	17 550	0.013
Mexico	2 026 200	1.842	2 486 700	1.842
Micronesia (Federated States of)	1 100	0.001	1 350	0.001
Monaco	26 437	0.024	26 437	0.020
Mongolia	3 300	0.003	4 050	0.003
Montenegro	5 500	0.005	6 750	0.005
Morocco	68 200	0.062	83 700	0.062
Mozambique	3 300	0.003	4 050	0.003
Myanmar	11 000	0.010	13 500	0.010
Namibia	11 000	0.010	13 500	0.010
Nauru	1 100	0.001	1 350	0.001
Nepal	6 600	0.006	8 100	0.006
Netherlands	10 017 600	9.107	10 017 600	7.420
New Zealand	278 300	0.253	341 550	0.253
Nicaragua	3 300	0.003	4 050	0.003
Niger	2 200	0.002	2 700	0.002
Nigeria	99 000	0.090	121 500	0.090
Norway	3 000 000	2.727	3 000 000	2.222
Oman	112 200	0.102	137 700	0.102
Pakistan	93 500	0.085	114 750	0.085
Palau	1 100	0.001	1 350	0.001
Panama	28 600	0.026	35 100	0.026
Papua New Guinea	4 400	0.004	5 400	0.004
Paraguay	11 000	0.010	13 500	0.010
Peru	128 700	0.117	157 950	0.117
Philippines	169 400	0.154	207 900	0.154
Poland	1 013 100	0.921	1 243 350	0.921
Portugal	521 400	0.474	639 900	0.474
Qatar	229 900	0.209	282 150	0.209
Republic of Korea	2 193 400	1.994	2 691 900	1.994
Republic of Moldova	3 300	0.003	4 050	0.003
Romania	248 600	0.226	305 100	0.226
Russian Federation	2 681 800	2.438	3 291 300	2.438
Rwanda	2 200	0.002	2 700	0.002
Saint Kitts and Nevis	1 100	0.001	1 350	0.001
Saint Lucia	1 100	0.001	1 350	0.001
Saint Vincent and the Grenadines	1 100	0.001	1 350	0.001
Samoa	1 100	0.001	1 350	0.001
San Marino	3 300	0.003	4 050	0.003
Sao Tome and Principe	1 100	0.001	1 350	0.001
Saudi Arabia	950 400	0.864	1 166 400	0.864
Senegal	6 600	0.006	8 100	0.006
Serbia	44 000	0.040	54 000	0.040

	2014		2015	
Country[a]	*United States dollars (budget: $110 million)*	*Percentage of budget*	*United States dollars (budget: $135 million)*	*Percentage of budget*
Seychelles	1 200	0.001	1 350	0.001
Sierra Leone	1 100	0.001	1 350	0.001
Singapore	422 400	0.384	518 400	0.384
Slovakia	188 100	0.171	230 850	0.171
Slovenia	110 000	0.100	135 000	0.100
Solomon Islands	1 100	0.001	1 350	0.001
Somalia	1 100	0.001	1 350	0.001
South Africa	409 200	0.372	502 200	0.372
South Sudan	4 400	0.004	5 400	0.004
Spain	3 270 300	2.973	4 013 550	2.973
Sri Lanka	27 500	0.025	33 750	0.025
Sudan	11 000	0.010	13 500	0.010
Suriname	4 400	0.004	5 400	0.004
Swaziland	3 300	0.003	4 050	0.003
Sweden	4 882 142	4.438	4 882 142	3.616
Switzerland	4 358 546	3.962	4 358 546	3.229
Syrian Arab Republic	39 600	0.036	48 600	0.036
Tajikistan	3 300	0.003	4 050	0.003
Thailand	262 900	0.239	322 650	0.239
The former Yugoslav Republic of Macedonia	8 800	0.008	10 800	0.008
Timor-Leste	2 200	0.002	2 700	0.002
Togo	1 100	0.001	1 350	0.001
Tonga	1 100	0.001	1 350	0.001
Trinidad and Tobago	48 400	0.044	59 400	0.044
Tunisia	39 600	0.036	48 600	0.036
Turkey	1 460 800	1.328	1 792 800	1.328
Turkmenistan	20 900	0.019	25 650	0.019
Tuvalu	1 100	0.001	1 350	0.001
Uganda	6 600	0.006	8 100	0.006
Ukraine	108 900	0.099	133 650	0.099
United Arab Emirates	654 500	0.595	803 250	0.595
United Kingdom of Great Britain and Northern Ireland	5 696 900	5.179	6 991 650	5.179
United Republic of Tanzania	9 900	0.009	12 150	0 009
Uruguay	57 200	0.052	70 200	0.052
Uzbekistan	16 500	0.015	20 250	0.015
Vanuatu	1 100	0.001	1 350	0.001
Venezuela (Bolivarian Republic of)	689 700	0.627	846 450	0.627
Viet Nam	46 200	0.042	56 700	0.042
Yemen	11 000	0.010	13 500	0.010
Zambia	6 600	0.006	8 100	0.006
Zimbabwe	2 200	0.002	2 700	0.002
Total[b]	**118 096 636**	**107.36**	**134 088 370**	**99.32**

[a]The United States of America does not participate in the voluntary indicative scale of contributions.

[b]The total biennial voluntary indicative scale of contributions is 2.9 per cent higher than the approved budget to accommodate possible negative discrepancies between the scale and actual contributions.

UNITED NATIONS

EP

UNEP/EA.1/INF/18

Distr.: General
21 May 2014

Original: English

United Nations Environment Assembly of the United Nations Environment Programme

United Nations Environment Assembly of the United Nations Environment Programme
First session
Nairobi, 23–27 June 2014
Item 8 of the provisional agenda*
High-level segment

Environmental sustainability for human well-being in the post-2015 development agenda**

Information note by the secretariat

Summary

Heads of State and Government and high-level representatives, having met at the United Nations Conference on Sustainable Development in June 2012, renewed their commitment to sustainable development and to ensuring the promotion of an economically, socially and environmentally sustainable future for our planet and for present and future generations. The follow-up to that historic moment has seen an intense period of multi-stakeholder consultation and analysis, which is to culminate in the achievement of international consensus on the post-2015 development agenda with sustainable development goals at its core.

A new development agenda should carry forward the achievements of the Millennium Development Goals, build on their lessons and respond to the challenges of the twenty-first century. Development cannot be met ambitiously and irreversibly without integrating environmental risks and opportunities. Integration – and not aggregation or prioritization – will be essential to the post-2015 development agenda. An integrated approach can generate multiple benefits and minimize or manage trade-offs, and would comprise three interlinked principles:

(a) Leave no one behind by ensuring sustainability, meeting a basic level of environmental and social standards;

(b) Live within the Earth's safe operating space, while ensuring equitable prosperity and sustainable growth;

(c) Leave assets behind for future generations, by building social, economic and environmental capital.

Environmental sustainability is a prerequisite for sustained and irreversible socioeconomic development and poverty eradication. The present information note focuses on the interlinkages between the environmental, social and economic dimensions. Five key transformational issues can be synthesized from a review of these interlinkages:

* UNEP/EA.1/1.

** Reissued for technical reasons; previously issued as document UNEP/EA.1/11.

- **Recognizing the aspiration of every citizen to a clean, healthy and productive environment as an essential standard for leaving no one behind and eradicating poverty.** This suggests the need for the redefinition of poverty as a multidimensional issue but would require the development of a global consensus to define it in all its forms

- **Improving socioeconomic and environmental benefits by making major investments in green, decent and meaningful jobs, such as in renewable energy, energy efficiency, ecological restoration and waste management.** Investing in improving the sustainability of agriculture, fisheries, forestry and animal husbandry protects existing rural jobs and the ecological foundation of our societies and reduces rural to urban migration. The public and private sectors could work towards suitable education policies, strengthening vocational training for rural and urban job markets, and reskilling and retooling the workforce

- **Ensuring long-term human well-being without depleting the finite resources of the planet: living within the global safe operating space and doing more and better with less.** This can be achieved through inclusive and green economic development, by reducing the material, energy and pollution intensity of current economic activities, while maintaining and sustainably increasing the productivity of those activities

- **Shifting consumption patterns to consume better and in a safer manner without slowing down sustainable growth.** Sustainable consumption is not about reducing consumption; it is about consuming better. Shifting consumption patterns should generate new jobs and markets, stimulate innovation in sustainability, transfer savings and resources to productive enterprises, and address malnutrition and obesity

- **Leveraging major investments to restore natural capital and transform infrastructure to secure services for current and future generations.** Long-lasting infrastructure, buildings and consumer products increase resource efficiency, and reduce material intensity. A major effort would be needed over the coming decades to repair and restore the Earth's life-support systems by developing policy and fiscal incentives, innovative technologies and community-led campaigns.

I. An integrated framework for the sustainable development goals and the post-2015 development agenda

1. Extensive consultations undertaken by member States, the United Nations system and a wide range of civil society stakeholders have identified key challenges that should be addressed in the post-2015 development agenda. Priorities in the social, economic and governance areas include: access to basic services and resources; social protection; health; education; poverty eradication; employment; food security; inclusive prosperity; technology; peace and security; rule of law, human rights, the combating of corruption, and transparency. A new development agenda should carry forward the achievements of the Millennium Development Goals. However, it has also been recognized that the Millennium Development Goals fell short by not integrating the economic, social and environmental aspects of sustainable development as envisaged in the Millennium Declaration, and by not addressing the need to promote sustainable patterns of consumption and production.[1] Development ambitions cannot be met without integrating the environmental risks and opportunities.

2. Integration will be essential to the post-2015 development agenda as a key reference point not only in terms of the three dimensions of sustainable development, but also in terms of the integration of the Millennium Development Goals in the sustainable development goals framework. A compelling new vision would integrate – in a balanced way – the economic, social and environmental dimensions. Integrated solutions can generate structural and transformative change, and will help to ensure that the post-2015 development agenda will be aspirational, inclusive and universal in nature, as agreed at the United Nations Conference on Sustainable Development.

A. Three interlinked principles for sustainable development

3. An integrated approach can be defined through three interlinked principles, which simply put are:

(a) Leave no one behind;

(b) Live within the Earth's safe operating space;

(c) Leave assets behind for future generations.

4. These multiple ambitions of sustainable development are interdependent. They can be transformed into three conceptual "filters" to assess whether the sustainable development goals and the post-2015 development agenda are comprehensive, complete, coherent and cohesive.[2] Essential solutions can be defined under each (see paras. 5–14) and are further elaborated in section II.

1. Leave no one behind and provide a life of dignity for all, through sustainable actions

5. The poor, vulnerable, and marginalized – in both developed and developing countries – should be assured of a minimum level of social and environmental protection, and a basic standard of living. The approximately 1.2 billion people living in extreme poverty must be enabled to achieve a life of dignity. Groups such as small-scale producers, indigenous people and women face increasing difficulties in accessing natural resources as these become scarcer and more costly. Environmental sustainability is a prerequisite for sustained and irreversible socioeconomic development and poverty eradication. It has been recognized that human rights and the environment are linked through the aspiration of every citizen to a clean, healthy and productive environment.[3] This is an essential ingredient for ensuring that no one is left behind, and more work could be done to better define and safeguard that aspiration.

6. Ensuring equitable access to basic goods and services derived from natural resources such as energy, water, sanitation, waste management, shelter and food, is high on the world agenda, but achieving such access through current models of scaling up and replication will further degrade the

[1] High-level Panel of Eminent Persons on the Post-2015 Development Agenda (2013). *A new global partnership: eradicate poverty and transform economies through sustainable development*. Available from www.un.org/sg/management/pdf/HLP_P2015_Report.pdf.

[2] UNEP Post-2015 Note No. 1, "Integrating the three dimensions of sustainable development: how to achieve a balanced, ambitious and inclusive framework", March 2014. Available from www.unep.org/post2015/Publications/UNEPPost-2015Note1/tabid/130049/Default.aspx.

[3] For example, the joint UNEP and Office of the United Nations High Commissioner for Human Rights (OHCHR) report, entitled *Human Rights and the Environment*, to the United Nations Conference on Sustainable Development (Rio+20), available from www.unep.org/delc/Portals/119/JointReportOHCHRandUNEPonHumanRightsandtheEnvironment.pdf.

environment. A shift to more efficient and less polluting practices can be made by investing in innovative and green technologies for more equitable delivery of basic services. Growing demand for sustainable nature-based products also creates new jobs and market opportunities for poor communities and small-scale producers in remote rural areas that conventional service providers cannot reach. Governments and civil society could aim to achieve this objective through policy and fiscal reforms, efficient management practices, new and innovative investments, and informed consumer choice.

2. Achieve greater and inclusive prosperity within the Earth's life support system

7. The Earth's human population is expected to rise to 9.5 billion by 2050, and the pressure this will place on planetary resources means that ensuring sustainability of our global life support system is of universal concern. The well-being of humanity and the functioning of the economy and society ultimately depend upon responsible management of the planet's finite natural resources. Ecological thresholds are different at different scales, but crossing cumulative thresholds at the global level, with climate change acting as a "threat multiplier",[4] will affect everyone on the planet whether in developed or developing countries. Ultimately, the poorest will suffer the most as they generally have the least capacity to deal with negative impacts. Ensuring prosperity today and in the future will require that economic growth no longer degrades the environment. Growth can be delinked (decoupled) from increasing material and resource use, and from the environmental and social impacts of unsustainable consumption and production, through a shift towards an inclusive and resilient green economy.[5]

8. Moving towards living within the global safe operating space, and doing more and better with less, can fuel innovation and local-level solutions. It will also need accompanying behavioural changes that influence consumption and bring about more societal cohesion. Transitioning to a green economy and sustainable consumption and production can strengthen economic growth in countries by shifting from traditional consumption-led growth models with overdependency on imports and consumer expenditure, and an entrenched reliance on unsustainable patterns of consumption and production, towards more sustainable economic growth strategies. We can do more and better with less, by reducing the material, energy and pollution intensity of current economic activities, while maintaining and sustainably increasing the productivity of those activities.

9. Sustainable consumption is not about reducing consumption, it is about consuming better – about what we buy and how we live in an intelligent and environmentally sustainable way. Shifting consumption patterns should not slow down growth, but rather should generate new jobs and markets, stimulate sustainable innovation, transfer savings and resources to productive enterprises, and address hunger and reduce obesity.

10. Country responses are likely to be differentiated depending on the current and projected economic circumstances and lifestyles of individuals and communities. With "relative decoupling", production and consumption increases, but overall resource use and pollution increase at a slower rate than that at which the economy expands. With "absolute decoupling", production and consumption increase, while resource use and pollution actually decrease in absolute terms. While absolute decoupling is possible, it is generally harder to achieve in technological terms, and often requires more financial investment and better institutional frameworks. As such, absolute decoupling is more immediately achievable for wealthier societies, which are expected to lead the way to achieving sustainable consumption and production, as enshrined in the 10-year framework of programmes on sustainable consumption and production patterns.

3. Invest to achieve greater resilience and secure future generations' livelihoods

11. Investment to produce more and better natural capital, social capital and economic capital (e.g., infrastructure and the built-environment) provides the means to achieve the multiple aspirations of sustainable development. Building more capital secures the assets of future generations and, if done with longevity in mind, can also ensure intergenerational equity, and resilience to social, economic, political and environmental shocks and disruptive change.

12. Healthy, educated and self-determining human populations provide the workforce for vibrant economies. Knowledge, skills and culture together represent social capital. Investing in education and knowledge for sustainable development, including traditional knowledge, expands our ability to adapt and new solutions.

---

[4] Intergovernmental Panel on Climate Change, *Fifth Assessment Report*, March 2014, chap. 13. Available from http://ipcc-wg2.gov/AR5/images/uploads/WGIIAR5-Chap13_FGDall.pdf.

[5] UNEP Post-2015 Note No. 2, "Sustainable consumption and production and the SDGs", March 2014. Available from www.unep.org/post2015/Publications/UNEPPost-2015Note2/tabid/133050/Default.aspx.

13. Investing in long-lasting infrastructure, buildings and consumer products increases resource efficiency, reduces material intensity and secures services for future generations.

14. Ecological restoration has multiple benefits, including in many cases a net profit for public and private sector investment. Currently, 60 per cent of the Earth's ecosystems are degrading, augmenting the impact of natural disasters, and lowering the productivity of lands and marine ecosystems.[6] In some scenarios, loss of ecosystem services is projected to result in a 25 per cent loss in the world's food production by 2050.[7] Investment in restoration can range from hundreds to hundreds of thousands United States dollars per hectare, and has therefore been daunting for public or private entities to undertake. However, the world can no longer afford to ignore the destruction of its ecological infrastructure or to leave it as a legacy for future generations. Evidence is mounting that the cost of restoration is much lower than the long-term costs of the alternatives, and can generate profit. For example, in South Africa, investment in restoring wetlands has led to increased employment, higher crop and reed productivity, more grazing for livestock and more water for domestic use.[8] The cost of reducing thermal pollution in the Tualatin River of Oregon, United States of America, by means of mechanical chillers was 15 to 30 times higher than the cost of establishing riparian forests to shade the water and augmenting stream flows with releases from upstream reservoirs.[9] A major effort is needed over the coming decades to develop policy and fiscal incentives, innovative technologies and community-led campaigns to repair and restore the Earth's life support systems for today's needs and for future generations.

B. Build on existing internationally agreed environmental goals and targets

15. At the United Nations Conference on Sustainable Development, Heads of State and Government recognized the significant contributions to sustainable development made by the multilateral environmental agreements[10] and requested that the future sustainable development goals build upon commitments already made.[11] There are many globally agreed goals contained in both binding and non-binding multilateral instruments, especially in the environmental sector.[12] Since 2012, Governments, through their participation in the multilateral environmental agreements, have encouraged all partners to consider existing goals as the basis for future goals.

16. The future goals and targets should be at least as, and preferably more, ambitious as what already exists. The inclusion of selected existing targets would underscore the urgency of existing commitments. Sustainable development goal targets on renewable energy, energy efficiency and low-carbon development trajectories would reinforce the objectives of the United Nations Framework Convention on Climate Change without duplicating its processes. Integrating biodiversity and ecosystem values into indices of poverty, prosperity and wealth, would support the Aichi Biodiversity Targets as they address the drivers of unsustainability. The new goals and targets could highlight emerging issues, and they could set a vision for renewing commitments to agreements whose terms will expire in the coming decades.

C. Universal concerns, differentiated responses

17. The post-2015 development agenda cannot be a zero-sum game; benefits or gains to one group or sector should not translate into losses for another.[13] Goals should be complementary and consistent; no goal should be achieved at the expense of another goal. Universality can be defined in several ways:

(a) Issues that are of common concern (e.g., the global commons, or the global financial system) that require common action;

---

[6] Millennium Ecosystem Assessment (2005): *Ecosystems and Human Well-being: Synthesis* (Island Press, Washington, D.C.). Available from www.unep.org/maweb/documents/document.356.aspx.pdf.

[7] *The Environmental Food Crisis: The Environment's Role in Averting Future Food Crises* (UNEP rapid response assessment, 2009). Available from www.grida.no/publications/rr/food-crisis.

[8] *The Economics of Ecosystems and Biodiversity in National and International Policy Making*. Available from www.teebweb.org/our-publications/teeb-study-reports/national-and-international-policy-making.

[9] Schmidt, R., Mulligan, J., 2013. Demonstrations of the Business Case. In Gartner, T., J. Mulligan, R. Schmidt, and J. Gunn, eds. 2013. *Natural Infrastructure: Investing in Forested Landscapes for Source Water Protection in the United States*. World Resources Institute. Available from www.wri.org/publication/natural-infrastructure.

[10] General Assembly resolution 66/288, annex, para. 89.

[11] Ibid., para. 246.

[12] See United Nations Technical Support Team (TST) (2014), "Compendium of existing goals and targets under the 19 focus areas being considered by the OWG SDG". Available at: www.unep.org/post2015.

[13] P. Caballero, P. Hazelwood and K. Van der Heijden, 2013, "Setting a new course: universality as an integral part of the post-2015 development agenda" (discussion note).

(b) Issues that do not affect countries and peoples in the same way or to the same degree, but require common action to address them in a globalized interdependent world (e.g., food security, the illicit trade in wildlife, managing chemical waste, unsustainable lifestyles or regional dust storms);

(c) Issues that may not be significant everywhere, but are recognized as requiring widespread support (e.g., eradicating extreme poverty).

18. The post-2015 development agenda and the sustainable development goals must address such universal concerns with a universal ambition which recognizes that each country starts with a different baseline of challenges, needs, priorities and response capabilities. It is also important to recognize that even countries that have achieved certain goals are vulnerable to reversal of such gains from future environmental, economic and social shocks. Responses can be differentiated through choice of development pathways and according to national circumstances and priorities. Some countries are able to leapfrog the usual development trajectory by adopting a more resource efficient and less polluting pathway, which avoids future costs. Countries' pathways will depend on their reconciliation of short-term versus long-term priorities.

D. Targets and indicators

19. Solution-oriented targets represent the best means of capturing an integrated vision while at the same time being actionable. For example, a target on reducing poverty may not be as effective in fostering an integrated approach to implementation as a target on increasing access to green and decent unskilled jobs, which aims to reduce poverty. The nature and scale of means of implementation (e.g., finance, policies and institutions) is better assessed and committed when targets and indicators are actionable.[14]

20. Targets and their associated indicators should also be scientifically credible (the level of ambition should be realizable within the time frame chosen), measurable and verifiable. Capacities should be built for new forms of measurement, such as integrated indices, that can become an incentive for greater cross-sectoral collaboration. Indicators could be direct or proxy, and could be disaggregated to capture gender, equity, age, disability status and regional differentiation.

II. Evidence from integrated solutions

A. Eradicating extreme poverty and inequality and providing decent employment through an inclusive green economy

21. An overwhelming majority of the 3 billion poorest people in the world live on smallholder farms, around forests or in coastal area and depends on the productive capacity of nature (such as soil, forests, fish, water and other forms of environmental assets). It is estimated that ecosystem services and other non-marketed environmental goods account for between 47 and 89 per cent of the "GDP of the poor". Current policies and investment choices have resulted in the degradation of resources, extreme poverty for some and inequality for others. Estimates show that 8 per cent of the world's population earns half the world's income, and the richest 85 people in the world own as much as the poorest half of the world's population.[15] More than two thirds of the world's people live in countries where income disparities have risen since 1980.

22. Redefining poverty and economic growth will provide the transformation required for sustainable development. When national savings are adjusted for the depletion of natural resources, they show a decline since the late 1990s, almost to zero in 2008. The degradation of the productive assets of the poor, compounded by a lack of access to modern sustainably built infrastructure, financing and markets, creates a poverty trap, which leads to a reinforcing loop of further degradation and worsening poverty.

23. Income-based poverty measures are too narrow in focus. Poverty is made of many other assets, including education and skills, health, sanitation, water, shelter, security, natural capital, energy, and formal or informal means of production. Similarly, measures of wealth and growth focus only on a few economic indices, whereas recent indices, such as the Inclusive Wealth Index (IWI), measure a

[14] *Embedding the Environment in Sustainable Development Goals*, UNEP Post-2015 Discussion Paper 2013, No. 1 (version 2, 19 July 2013). Available from: www.unep.org/pdf/UNEP_Post_2015_Discussion_Paper_1_%28Version2%29.pdf.

[15] *Working for the Few: Political Capture and Economic Inequality* (Oxfam Briefing Paper No. 178, 2014).

full range of assets such as manufactured, human and natural capital. Redefining poverty and economic growth would show the true state of a nation's wealth and the sustainability of its growth.[16]

24. Public and private investments in green and decent jobs will provide the foundation for sustainability. Today, "green and decent jobs" are one of the fastest growing sectors in the global economy.[17] These include jobs related to nature-based activities, environmental technologies for sanitation, energy, ecological restoration and waste-recycling activities that provide good working conditions, are meaningful and socially protected. But it is also necessary to invest in improving the sustainability of agriculture, fisheries, forestry and animal husbandry so as to protect existing jobs, reduce rural to urban migration, and protect the ecological foundation of our societies. Innovations in resource productivity, resource substitution, biomimicry and green chemistry are generating a huge potential for reducing wastes and environmental impacts from material-intensive processes and hazardous chemicals. A severe shortage of skills has, however, been evident in some fast-growing sectors such as renewable energy and energy efficiency. There is a need for better defining education policies, strengthening vocational training suitable for the rural and urban job markets, reskilling and retooling the workforce, and training teachers. Public-private partnerships could be encouraged to include sustainability commitments and build necessary skills and capacities.

25. An integrated approach to addressing poverty challenges should increase the human development index while carefully managing the ecological footprint. A combination of nationally appropriate green economy measures at macro, meso and microeconomic levels (e.g., macroeconomic reforms, correcting misallocation of capital, increasing trade opportunities for the poor through appropriate policy measures, use of economic instruments, triple bottom line reporting for corporations, use of sustainability standards for supply chains, investing in natural capital, use of sustainability principles for other investments and insurance, etc.) and social policy tools (e.g., safety nets, access to productive assets, to justice and security, and investing in skill-building, education, health and other social sectors) offers a viable pathway for reducing extreme poverty, increasing inclusiveness and addressing environmental and economic risks.

B. Sustainable water and energy services

26. An integrated approach to the development, management and use of water is needed. The world's water resources are in crisis, with strong competition for limited resources for different uses. Access to clean and safe drinking water, sanitation and hygiene is a basic human need. Today, 2.5 billion people, including almost 1 billion children, live without even basic sanitation. Every 20 seconds, a child dies as a result of poor sanitation. That is 1.5 million preventable deaths each year.[18] Water is also required for food and energy production, as well as for the functioning of ecosystems, which in turn are important for maintaining supply. Water pollution compounds water scarcity, and scarcity feeds inequality. Approximately 90 per cent of all disasters are water-related and their economic cost extends well beyond immediate losses, hindering development over decades. Floods and droughts are becoming more severe due to climate change, which is compounded by emissions of methane and nitrous oxide from untreated wastewater discharge. An integrated approach to the development, management and use of water would therefore address all the dimensions of the water cycle, connecting access, use, development, pollution and risks associated with water. The issue concerns not only access to water, but also sustainable and equitable water services that serve today's needs and those of future generations. This will require capacity development and investment in technologies and tools that improve resource efficiency, equitable resource allocation and resilience to climate variability and change.

27. Universal access to modern sustainable energy services for cooking and productive use will provide multiple benefits. Energy is an enabler of socio-economic development for all countries and all people, needed in sectors such as water, sanitation, agriculture, construction or transportation. "Business as usual", with 85 per cent of primary energy being fossil-fuel based, generates pollution, increases energy insecurity and is too costly for remote and marginalized communities. Universal access to modern sustainable energy services for cooking and productive use will provide important benefits for health, local economic development and climate change mitigation, and reduce a special burden placed on women. For example, the World Health Organization (WHO) estimates that if half of the global households that still use traditional fuels and stoves switched to cleaner cooking sources,

[16] *Inclusive Wealth Report 2012: Measuring progress toward sustainability* (UNU-IHDP and UNEP, 2012).

[17] UNEP Post-2015 Note No. 4, "Green and decent jobs for poverty eradication". Available from www.unep.org/post2015/Publications/UNEPPost-2015Note4/tabid/133133/Default.aspx.

[18] "Sanitation" (UN-Water factsheet). Available fromwww.unwater.org/fileadmin/user_upload/unwater_new/docs/sanitation.pdf.

families would save $34 billion per year over a 10-year period and generate an economic return of $105 billion per year.

28. Renewable energy resources still remain largely unexploited, supplying only 19 per cent of global energy use, especially in developing countries where infrastructure is being developed. Important technological advances have taken place in recent years that have enabled better harnessing of these renewable energy resources and made them more accessible for electricity, cooking, heating and cooling, and as transportation fuel. In 2012, the renewable energy sector worldwide employed 5.7 million people. Improving energy efficiency is a proven, cost-effective near-term option to reduce projected primary energy supply requirements in all countries, representing 70 per cent of the reduction in projected global energy demands in 2035.[19] Buildings present a huge potential for energy efficiency, which saves money and resources, and the use of local building materials spurs local economic development. Urgent reforms of wasteful fossil fuel subsidies are needed to provide a level playing field for transformative improvement of global energy systems.

C. Health, chemicals and the environment

29. A clean and healthy environment, through effective environmental management, will provide multiple benefits to society and the economy. Experts have estimated that nearly one-quarter of all diseases and deaths are due to hazards from unhealthy living and working environments. Air pollution, inadequate management of chemicals and wastes, poor water quality, ecosystem degradation, climate change and ozone layer depletion all pose significant threats to human health, both individually and combined.[20] An integrated approach to the sound management of chemicals and waste, in support of the implementation of the relevant multilateral environmental agreements, will ensure that the direct contributions of ecosystems to better health and a cleaner environment are captured in the decision-making process at all levels of national governance.

30. Switching to cleaner fuels and alternative sources of energy, and more efficient production and use of fuels and energy, are effective ways to address air pollution exposure and thereby improve health, and derive other benefits, such as reduced deforestation, increased access to modern energy services and a reduction in black carbon.

31. Sustainable land, water and forest management, along with conservation and restoration, will protect and enhance biodiversity and ecosystem services, and result in greater food security thus reducing malnutrition, and provide a clean and healthy environment to nurture cultural, social and recreational activities that are important to our mental health, and economic growth for local populations and businesses. Reducing water-related diseases and protecting water quality from all sources of wastewater pollution – domestic, industrial or agricultural – is essential for sustainable development.

32. Measures to reduce the impact of climate change can address threats to public health. These include measures to cool large urban centres, sustainable wetlands management to control vector-borne such as malaria, and the effective use of climate information. The phase-out of the remaining ozone-depleting substances, technology choices that are climate friendly and the sound management of existing ozone-depleting substances captured in buildings and equipment will prevent millions of cancer-related deaths.

D. Food security through maintaining and repairing our life-support system

33. Food security can be increased irreversibly by promoting a major shift to eco-based production, optimizing food energy efficiency, ensuring equitable access and rights to land and resources, and encouraging a major shift towards nutritious and balanced diets. The world produces enough calories to feed all its population, yet 842 million people go hungry, 2 billion are malnourished and 1.4 billion are considered overweight or obese. Food prices continue to fluctuate, leading to food insecurity, with the possibility of future crises similar to the one that took place in 2008, which was due to a combined effect of speculation in food stocks, extreme weather events, growth in biofuels competing for land, and expansion of cropland into areas less suited for farming.[21] The global food demand at current consumption levels is expected to increase by 60 per cent by 2050.[22] The

[19] *World Energy Outlook 2012*, International Energy Agency, (Paris, IEA/OECD, 2012), p. 282.

[20] UNEP Post -2015 Note No. 3, "Human health and the environment". Available from www.unep.org/post2015/Publications/tabid/133031/Default.aspx.

[21] *The Environmental Food Crisis: The Environment's Role in Averting Future Food Crises* (UNEP rapid response assessment, 2009).

[22] *World Agriculture Towards 2030/2050: The 2012 Revision*, ESA E Working Paper No. 12-03. Available from http://www.fao.org/economic/esa/esag/en.

International Resource Panel estimates that the consumption of natural resources will triple by 2050.[23] However, over the past quarter century, 24 per cent of the global land area is estimated to have suffered declines in quality and productivity, which is undermining the future ecological foundation of food and nutrition security.[24] The extinction of species continues unabated and we face a potential collapse of oceanic and coastal systems. World food production has risen substantially in the past century, primarily as a result of expansion of cropland, increasing wasteful practices and the use of harmful chemical substances at the expense of the environment.

34. It is estimated that one third of all food produced for human consumption is lost or wasted - around 1.3 billion tons every year. Even if just one-fourth of the food currently lost or wasted globally could be saved, it would be enough to feed the hungry in the world.[25] Reducing post-harvest crop losses (harvesting, processing and distributing) and food waste along the retailer and consumer end of the food supply chains, would reduce the environmental and economic impact of producing 1.3 billion tons of food that go to waste annually.[26] In industrialized regions, almost half the total food waste - around 300 million tons annually - occurs because producers, retailers and consumers discard food that is still fit for consumption. Significantly reducing food loss and waste can also help to avoid further conversion of sensitive land, rangelands and forests, thereby reducing conflicts over land and the use of water, insecticides and pesticides.

35. Food security can be increased through a four-pronged approach:

(a) By enhancing supply through optimizing food energy efficiency (minimizing the loss of energy in food from harvest through processing to actual consumption and recycling);

(b) By a major shift towards eco-based production, water-use efficiency, reversing and restoring degraded lands to their natural potential, and recognizing the value of ecosystem services and natural capital;

(c) By addressing unequal access and rights to natural resources and empowering smallholders and rural women as critical agents for food security and protection of agro-biodiversity;

(d) By a major shift towards diets (or sustainable diets) that minimize environmental impacts, increase nutritional value and ensure sustainable livelihoods for farmers.

36. Pastoralism is an ecologically viable extensive production system that produces healthy meat, milk, fibres and hides, but is generally impeded by privatization of communal grazing lands, obstruction of livestock movement corridors, and loss of natural, social and economic infrastructure; reversing these trends would increase the rate of return from the livestock industry while decoupling it from environmental degradation.[27]

37. Biodiversity and ecosystem services directly support major economic activity and jobs in such diverse sectors as agriculture, fisheries, and forestry. Many ecosystem services also directly underpin agricultural productivity. For example, pollinator services are estimated to provide a value of $353.6 billion to agriculture annually, but they are severely threatened due to habitat loss.[28] Increasing agricultural productivity, including through the efficient use of water, diversity of species and varieties, and healthy ecosystem services, is possible while in parallel halting and reversing land degradation, drought and desertification. Theoretically, restoring the 2 billion hectares of degraded agricultural land could boost food production by up to 79 per cent – or feed up to 2.25 billion people.[29]

38. Deforestation and forest degradation cause an estimated 17.4 per cent of global greenhouse gas emissions, but sustainably managed forests are important carbon sinks and provide essential services such as water supply and water quality, soil conservation, local climate regulation, timber and non-timber products. Sustainable forest management will require good governance and other enabling

---

[23] *Decoupling Natural Resource Use and Environmental Impacts from Economic Growth* (UNEP, 2011). Available from www.unep.org/resourcepanel/publications/decoupling/tabid/56048/default.aspx.

[24] *Avoiding Future Famines: Strengthening the Ecological Foundation of Food Security through Sustainable Food Systems*, a UNEP synthesis report (2012), available from www.unep.org/publications/ebooks/avoidingfamines/portals/19/UNEP_Food_Security_Report.pdf; and United NationsTST Brief, "Food security and nutrition", available from sustainabledevelopment.un.org/content/documents/1804tstissuesfood.pdf.

[25] Save Food: Global Initiative on Food Losses and Waste Reduction, FAO/UNEP 2014. Available from www.fao.org/save-food/key-findings/en.

[26] Ibid.

[27] *Pastoralism and the Green Economy*, IUCN and UNEP (forthcoming).

[28] See www.unep.org/newscentre/default.aspx?DocumentID=2760&ArticleID=10692.

[29] "Food loss, food waste", UNEP Rapid Response Assessment (forthcoming).

conditions together with practical measures such as protection, conservation, restoration and afforestation, agroforestry, sustainable harvesting of timber and utilization of forest products. For example, farmer-managed natural regeneration of land, including the replanting of trees and fire protection, has enabled increased food production, greater financial savings and improved well-being of children in the Talensi area of Ghana.[30]

39. Oceans are crucial for food security, as they provide food and nutrition directly through fishing and marine aquaculture and indirectly through animal feed.[31] There is a need for policy reforms to address issues such as access regimes, fiscal structures and perverse subsidies, innovative public/private sector partnerships, innovative management and financing mechanisms, and enforcement of measures to improve the state of the oceans and their resources. This will contribute to the effective management and, where needed, the restoration of degraded marine ecosystems, bringing more areas under scientifically credible ecosystem management approaches and transparent and participatory stewardship. Since some of these issues originate from land use, policies for improving oceans will have multiple benefits for upstream systems.

40. Smallholder producers and women are frequently cited as powerful resource stewards. Ensuring tenure for smallholder farmers and women allows them to invest in and protect their land from degradation. Many countries have clarified the relationship between customary and statutory rights on land and natural resources and have established mechanisms for dispute resolution and access to justice.

E. Sustainable consumption and production and economic growth

41. Future prosperity will require that economic growth no longer degrades the environment. Achieving sustainable consumption and production patterns is not just an environmental issue; it concerns natural capital and hence the productivity and capacity of our planet to meet human needs and sustain economic activities in the light of increasing populations and a growing consumer middle class. The shift to sustainable consumption and production patterns through valuing, maintaining and increasing natural capital, sustainable innovation and dematerialization processes, such as industrial ecology, resource substitution, and biomimicry, are already creating new opportunities for poverty eradication, green jobs, business and enhancing prosperity for current and future generations.

42. More sustainable, clean and efficient production of goods and services is central to sustainable development. The supply side of the sustainable consumption and production challenge requires attention to the following objectives: (a) sustained provision of natural resources that are key to human survival, such as water, food, energy and productive and habitable land; (b) sustained provision of factors of production for economic development, which implies measuring and sustainably managing key renewable and non-renewable resources (such as timber, fibre, metals and minerals); and (c) reducing pollution associated with human and economic activity – such as greenhouse gas emissions, toxic chemicals, particulates and excess nutrient releases – that can harm human health and degrade ecosystems.

43. Stronger emphasis is required on resource efficiency in government policies, public and private sector management practices, technology choices and investments so as to deliver more output per unit of input, as well as less associated environmental damage. A key means of achieving this through improved government policies and public-private partnerships is sustainable public procurement, since Governments are the largest consumer in many national economies.[32]

44. A shift towards sustainable production can contribute to green, inclusive and decent employment, as well as enhanced labour markets. For example, sustainable agricultural systems tend to be more labour intensive, as this input replaces often-toxic or polluting chemical inputs. However, creating more decent jobs in sustainable production will require policies to redirect investment, transfer technologies and establish measures to retrain workers.

45. Societies should move to better and safer consumption. Current consumption patterns are drivers for unsustainable production and resource degradation. Demographic trends show that by 2030 the growing global middle class is likely to comprise three billion consumers, placing increasing

[30] *Pastoralism and the Green Economy*, IUCN and UNEP (forthcoming).

[31] United Nations TST Brief, "Oceans". Available from http://sustainabledevelopment.un.org/content/documents/2311TST%20Issues%20Brief%20Oceans%20and%20Seas_FINAL.pdf.

[32] 10-year framework of programmes on sustainable consumption and production patterns, sustainable public procurement programme. Available from www.unep.org/10yfp/Portals/50150/downloads/Brochure_SPP%20Programme_10YFP.pdf.

pressures on resources. It must be emphasized that sustainable consumption is not about consuming less; it is about consuming better and more responsibly – i.e., more efficiently, with less risk to our health, environment and society. Sustainable consumption affects purchasing behaviours, as well as all types of interactions between individuals and infrastructures (mobility, leisure, housing), which together make up lifestyles and livelihoods. It can be promoted through a mix of policy, economic and voluntary instruments, including formal and informal education. Sustainable consumption can generate economic benefits, social well-being and social inclusion (access to markets, innovation, job creation and healthier livelihoods and lifestyles) in addition to reducing environmental risks and capitalizing on environmental opportunities.

46. Achieving sustainable consumption patterns is more technically and politically complex than changing production patterns because it raises important issues to do with human values, equity and lifestyle choices, among other things. There are, however, some large-scale initiatives aimed at improving and spreading the use of energy-efficient appliances and on promoting access to cleaner, affordable forms of energy and related energy services (e.g., "Sustainable Energy for All") or reducing food loss and waste. Elevating the issue of sustainable consumption to the necessary level of policymaking and decision-making will require work on education and awareness-raising among consumers, civil society, the private sector and policymakers. At the international level, it may also require negotiations which, in an inclusive and objective manner, take account of current imbalances in and the impacts of unsustainable consumption patterns. At the United Nations Conference on Sustainable Development in June 2012, world leaders adopted the 10-year framework of programmes on sustainable consumption and production patterns. They also recognized that sustainable consumption and production is a universal concern, and that developed countries should provide leadership in promoting a shift to sustainable consumption and production patterns.

F. The rural-urban continuum, sustainable cities and infrastructure

47. Strong urban-rural linkages for regional infrastructure and ecosystem services, smart and low-carbon cities and balanced territorial development will ensure sustainable economic growth. For the first time in history more than half the world's population live in urban areas and this is expected to rise to nearly 70 per cent by 2050.[33] The majority of population growth in cities is the result of natural increase, rural-urban migration and the reclassification of formerly non-urban areas. Significant future urban growth is expected in developing countries, most notably in African and Asian cities.[34] Many cities are struggling to secure basic resources, such as food, energy and water needed to support current and future residents. They have insufficient or aged infrastructure, and lack the capacity to manage the waste generated by their industries and residents. Urban areas currently account for 60–80 per cent of global energy consumption, 75 per cent of carbon emissions, and more than 75 per cent of the world's natural resources.[35] Furthermore, wealth and poverty are increasingly segregated in cities, especially in the spatial trap of slums. There are now roughly one billion slum dwellers worldwide, including one third of the population of the developing world. Slum dwellers' lack of durable housing, secure tenure and access to basic services – including health services, adequate food, education and employment opportunities, decent transport, credit and the rule of law – often further entrench them in poverty.[36]

48. The urban future could provide inclusive, sustainable economic growth, strengthened social cohesion and improved environmental outcomes. Well-planned, compact cities that offer a mix of land uses, building typologies, transport and jobs generally also offer higher levels of well-being at lower rates of resource use and emissions.[37] Urban centres provide opportunities for a range of social and cultural activities, and are critical for innovations in science, technology and education.[38]

49. Cities draw widely upon the resources – material, human and environmental – in their hinterlands and offer much – employment, services, infrastructure – in return. Poverty in rural areas is fuelling rapid migration to cities, with many of the jobless ending up in slums. The improvement of slums is not keeping up with this trend. Experience from countries across all income levels suggests

[33] "An overview of urbanization, internal migration, population distribution and development" (UN/POP/EGM-URB/2008/01).

[34] *State of the World's Cities: Bridging the Urban Divide* (UN-Habitat, 2010).

[35] *City-Level Decoupling: Urban Resource Flows and the Governance of Infrastructure Transitions* (UNEP, 2013) (International Resource Panel report of the Working Group on Cities).

[36] United Nations TST Brief, "Sustainable cities and human settlements". Available from http://sustainabledevelopment.un.org/content/documents/2306TST%20Issues%20Brief%20Cities_FINAL.pdf.

[37] Ibid.

[38] *Sustainable, Resource Efficient Cities: Making it Happen* (UNEP, 2012). Available from http://sustainabledevelopment.un.org/content/documents/1124SustainableResourceEfficientCities.pdf.

that strong urban-rural linkages, especially around economic development, employment, and regional infrastructure and ecosystem services, are important to achieving sustainable development outcomes that promote local-level sustainability and resilience, and ending extreme poverty. Addressing the rural-urban continuum for a balanced territorial development is possible. Integrated solutions include: sustainable rural development; using land in a resource-efficient manner; minimizing sprawl and landscape fragmentation and maximizing the conservation of peri-urban agricultural land and rural habitat; promoting land tenure and strengthening the rights and livelihoods of rural and urban tenants alike; and promoting national policies that support the balanced development of territories.[39]

50. Infrastructure choices made today will have critical implications for the future sustainability of cities across the world. Investing in the development of low-carbon, climate-resilient infrastructure entails constructing, or renovating, infrastructure systems (power, road, rail, water, buildings, etc.,) to substantially reduce global greenhouse gas emissions, while simultaneously making these systems, and the societies they serve, more adaptable to extreme weather conditions and rising sea levels.[40] The infrastructure for basic services, such as roads, water, shelter and electric grids, must also become more durable and long-lasting, and its material intensity must be reduced. For example, sand and gravel, which are used in construction, land reclamation, pavements, concrete roads and embankments and shoreline development, among other things, are now being extracted at a rate far greater than their rate of renewal. This is having a major impact on rivers, deltas, coastal and marine biodiversity and ecosystems, resulting in the loss of productive land through erosion, and the lowering of the water table. To reduce the consumption of sand, recycled building materials, quarry dust and recycled glass can be used as substitutes, and alternatives can be found for building houses, including wood, straw and other recycled materials.[41]

51. Furthermore, the digital age allows for smarter cities where information technology can be used to coordinate and share data in a single view, creating a "big picture" for decision makers and providing real-time information to both providers and users to help improve the provision of water, transport and energy, among other things.[42]

G. Environment for resilient and peaceful societies

52. Sound stewardship of natural assets, sustainable ecosystems management and improved environmental governance are critical to the development of peaceful societies that are resilient to social, economic and environmental shocks. At least 40 per cent of all violent conflicts in the last 60 years have been linked to natural resources. Climate change and more frequent natural disasters are expected to increase the risk of such conflicts by degrading the available resource base. Sound stewardship of resources, access to information, inclusive decision-making, equitable access to and sharing of benefits arising from the use of natural resources, and the rule of law are essential to mitigate these risks and help create resilient and peaceful societies.[43]

53. Environmental factors, while often not the sole cause of violent conflict, can spark violence and contribute to chronic instability and unrest if not properly managed. Low-income economies, largely dependent on natural resources, are 10 times more likely than other developing countries to experience civil war and significantly slower economic growth than similar countries without major natural resources. Increasing climate stresses and disaster risk may further compound local tensions and instability by eroding critical resources, such as water, on which livelihoods depend.

54. Other compounding effects result from unequal access to information and unclear regulatory frameworks or a confusing overlap of access rights to renewable resources. Prolonged insecurity may also discourage the local and international private investment that is critical for job creation, poverty eradication and economic growth.

55. Sound stewardship of natural assets, sustainable ecosystems management and improved environmental governance are critical to sustaining the key regulating and provisioning services essential to human development and building resilient, stable societies. Customary and statutory

[39] "Question and answer on sustainable cities and human settlements in the SDGs", UN-Habitat, 2014.

[40] Kennedy, C. and J. Corfee-Morlot (2012), "Mobilizing investment in low carbon, climate resilient infrastructure", OECD Environment Working Papers, No. 46. Available from http://dx.doi.org/10.1787/5k8zm3gxxmnq-en.

[41] "Sand rarer than one thinks", UNEP, 2014. UNEP Global Environmental Alert Service, March 2014. Available from http://na.unep.net/api/geas/articles/getArticleHtmlWithArticleIDScript.php?article_id=110.

[42] See, for example, http://www.ibm.com/smarterplanet/us/en/smarter_cities/overview/and http://ec.europa.eu/digital-agenda/living-online/smart-cities.

[43] UNEP Post-2015 Note No. 5, "Environmental dimensions of resilient and peaceful societies". Available from http://www.unep.org/post2015.

processes should be accessible to all, and the relationship between the two should be clear. Governments and businesses need to commit to sustainable and transparent practices and accountability frameworks. Peace agreements and peace-building interventions should address grievances related to the environment and natural resources, including about access, use or ownership of land and water. Preventing illegal and illicit exploitation, including trafficking in wildlife, timber or minerals, reduces conflict drivers and improves the chances for sustainable development. Inclusive decision-making processes should ensure fair representation and participation of those who are affected by natural resource overexploitation. The environment and natural resources can also form a good platform for building confidence and a tangible basis for cooperation between social groups and between countries and regions. Access to accurate and reliable information is a building block for informing expectations and establishing a realistic and equitable national vision of and appropriate policies to safeguard the natural wealth of societies.

III. Building the sustainability foundation for the post-2015 development agenda

A. Governance and means of implementation

56. The implementation of the post-2015 development agenda will require States and other relevant actors, acting individually and collectively, to adopt policies and mobilize resources to advance equitable, human-rights-based and sustainable development.

57. A renewed and strengthened global partnership to mobilize the means of implementation for sustainable development needs to:

(a) Address the social, economic and environmental dimensions of sustainable development in an integrated manner;

(b) Build on existing commitments and governance structures, ensuring that new initiatives reinforce previous successes;

(c) Reinforce coherence in the implementation of a universal post-2015 development agenda, leveraging resources across diverse funding mechanisms;

(d) Strengthen governance and accountability frameworks, providing for multi-stakeholder engagement, including for financing, technology innovation and diffusion and capacity-building for people and institutions.

58. Integrated solutions require appropriate enabling environments in order to flourish. Where the public sector has committed to strong local government, effectiveness and broad coverage of public services, transparency in public finances management, and open and equitable access to information, solutions have been successful and replicated. This needs to be complemented by a private sector commitment to corporate social and environmental responsibility and to sustainable procurement. All sectors need to work together on curbing illicit flows of financial and natural resources and reducing corruption. Sustainable development is underpinned by open, rule-based, non-discriminatory and equitable multilateral trading systems, and the phasing out of inefficient and distortive subsidies that encourage wasteful production and consumption.

59. Many nations may need to undertake policy reforms and establish new institutional arrangements, especially to enable cross-sectoral and integrated actions towards achieving common goals and targets, and to promote collective decision-making to generate multiple benefits and protect global public and environmental goods. Multi-stakeholder initiatives and partnerships at all levels can discourage a silo mentality and tackle integrated solutions.

60. Public and private sources of sustainable development finance should be seen as complements, not substitutes. Public policies that enable action are critical to address market and policy failures that prevent investment from both domestic and international private sectors. Investments in green infrastructure can be mobilized through pricing policies, policy support such as tariffs and standards, project support and public financing instruments. Innovative tools exist for mobilizing public revenue and domestic savings and leveraging remittances for the public benefit and to raise resources for financing investments in high risk and less lucrative areas, such as long-lasting infrastructure and ecological restoration, new technologies, social protection, health and basic education, and global public goods. Innovative finance can jointly leverage public and private funds. More transparent and effective philanthropy is needed, with greater coherence at the national level with other public and private efforts. Enhancing accountability and coordination in development cooperation, such as

through the International Aid Transparency Initiative (IATI),[44] should also include incentives for integrating the three dimensions of sustainable development.

61. United Nations commitments over the past 20 years have facilitated technology transfer and capacity-building across the world. However, progress in technology transfer, including clean technologies, has fallen short of the ambitious goals laid out in Agenda 21 and subsequent sustainable development outcomes, and technological progress has sometimes failed to produce envisaged development results. This is often due to the absence of a favourable enabling policy framework for the transfer of knowledge guided by justice and equality, and for encouraging home-grown solutions based on local or traditional knowledge. South-South and triangular cooperation, research and development networks, an increasingly mobile and skilled workforce, and regional integration, are trends that can support technology transfer and capacity-building efforts. In the outcome document of the United Nations Conference on Sustainable Development, "The future we want", Heads of State and Government also called for the continued and focused implementation of the Bali Strategic Plan for Technology Support and Capacity-building, as endorsed by the United Nations General Assembly.

62. In addition, there are good practices and strong standards that can be applied to ensure social and environmental safeguards in all activities. Although these have been formalized in "environmental and social impact assessments" and similar tools, there is a need to update and better apply these standards in all situations. There is also a need to build capacity for results-based management and learning.

B. Innovation for monitoring, accountability, reporting and access to information

63. The post-2015 development agenda will require a robust, transparent and multi-stakeholder monitoring and reporting framework to ensure that progress towards meeting goals is effectively tracked and that stakeholders are mutually held accountable for action and delivery. Relevant and timely information would increase efforts to meet goals for which slower progress is being made, thereby fostering the achievement of sustainable development in a balanced and mutually reinforcing way.

64. Better, comparable baseline data and statistics will be required to measure a broader range of indicators, requiring new and disaggregated data. Innovation and new technologies need to be embraced for data collection, monitoring, analysis, quality control and verification and to empower and enable a wider range of stakeholders, beyond Governments and the United Nations system, including international organizations, foundations, citizens and responsible businesses, to play an important role. Capacity – technical and financial – will need to be strengthened, especially in developing countries, to build solid statistical systems to undertake monitoring. These efforts need to be reinforced by new global partnerships for monitoring progress and strengthening accountability.

65. The ongoing data revolution is based on the social and economic opportunities that arise from moving to an open access to information model of governance embracing the ideas of using big data and near real-time information that supports a transformation in societal behavior. Massive increases in the volume and speed of data gathering are providing us with unique and unparalleled opportunities to detect changes in the environment and human populations. The trend towards using large data streams has always been present in the Earth's observation, climatology and meteorology, but the analytical paradigm has remained rooted largely in the use of causal models and statistical sampling. Other fields of endeavour, such as epidemiology and security, have already begun to shift away from the traditional statistical approach of identifying causality in anticipating probable events towards big-data approaches. For example, by using vast data gathering and search procedures combined with fuzzy logic and new algorithms, disease control centres can anticipate the spread of a flu virus in a matter of hours rather than weeks.

---

[44] The International Aid Transparency Initiative (IATI) was launched at the Third High-level Forum on Aid Effectiveness, held in Accra in 2008, and was specifically designed to support donors in meeting their Accra commitments on transparency as set out in the Accra Agenda for Action. The Busan Partnership for Effective Development Cooperation, adopted at the Fourth High-level Forum on Aid Effectiveness, was released on 1 December 2011, and includes a specific reference to IATI, committing all those who endorsed the Partnership to: "Implement a common, open standard for electronic publication of timely, comprehensive and forward looking information on resources provided through development cooperation, taking into account the statistical reporting of the OECD DAC and the complementary efforts of the International Aid Transparency Initiative and others. This standard must meet the needs of developing countries and non-state actors, consistent with national requirements". Available from www.aidtransparency.net.

66. The experiences of other multilateral environmental processes in monitoring, accountability, reporting and access to information can provide input in the form of lessons learned to the sustainable development goals and post-2015 development agenda. The Montreal Protocol on Substances that Deplete the Ozone Layer is one of the most successful environmental treaties, including in terms of policymaking and enforcement, and its success was based on, inter alia, its ability to be strengthened (adjustments and amendments to the Protocol) and to be high on the policy agendas of all countries. Assessment panels provide independent, authoritative and up-to-date assessments, and the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol looks into cases of non-compliance and facilitates solutions. In a similar vein, the implementation of the Kyoto Protocol to the United Nations Framework on Climate Change is monitored by its Compliance Committee, supported by expert review teams that trigger the assessment and validation of information.

67. Another progressive mechanism is provided by the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention). In addition to the Secretariat's efforts, members of the public are able to submit information concerning a party's compliance with the Convention complementing the usual trigger through parties with respect to their own or other parties' compliance. The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, adopted in 2010, takes the matter one step further in that a mechanism is being discussed that would enable indigenous peoples, their communities and other local communities to monitor the implementation of the Nagoya Protocol by bringing cases of non-compliance to the attention of the secretariat and the Conference of the Parties to the Convention.

68. UNEP Live is capitalizing on the data revolution and will incorporate data and information from varied sources including Governments, research networks, communities of practice, major groups, indigenous peoples and civil society to facilitate the exchange and sharing of up-to-date data, information, assessments and knowledge in order to keep the environment and emerging issues under review. These transparent and inclusive characteristics make it an ideal platform for monitoring and reporting on progress towards meeting the sustainable development goals and other objectives of the post-2015 development agenda. Modelled on these principles, an "SDG Live" platform, supported by the United Nations system and its various statistical and monitoring or reporting networks and mechanisms, could be used to measure progress towards the targets and indicators of the post-2015 development agenda and the sustainable development goals.

IV. Conclusions

69. A new post-2015 development agenda demands a new vision and a responsive framework with sustainable development at its core. The "business as usual" scenario is not affordable, either socially or environmentally, or, in the long run, economically. The integration of economic growth, social protection and justice, and environmental stewardship should be at the core of the sustainable development goals and the post-2015 development agenda.

70. Addressing issues in silos will not lead humankind along a pathway towards sustainable development. In order to fully integrate the three dimensions of sustainable development, the interlinked problems need to be understood and responses developed that provide multiple benefits across the three dimensions. The discussion no longer needs to focus on trade-offs but on the most intelligent choices in order to maximize multiple benefits. The present background paper provides a solid evidence base to demonstrate that integrated solutions do exist and are being practised around the world today.

71. Innovative, affordable and sustainable technologies and integrated solutions that generate green and decent jobs can achieve the objective of leaving no one behind. The needs of a growing population could be reconciled with a resource base that is shrinking through inefficient and wasteful use, if political commitment, economic incentives, and social accountability are brought to bear to leverage a shift towards sustainable consumption and production. Sustaining growth will not be enough to solve the multiple social, economic and environmental challenges; instead, sustainable and inclusive growth must replace it.

72. Solutions need an enabling environment. Efforts therefore also need to focus on changing, reforming and retooling governance structures at all levels for greater integration, transparency and accountability, and leveraging multiple stakeholders into action.

UNITED NATIONS

EP

UNEP/EA.1/INF/19

Distr.: General
21 May 2014

Original: English

United Nations Environment Assembly of the United Nations Environment Programme

United Nations Environment Assembly of the United Nations Environment Programme
First session
Nairobi, 23–27 June 2014
Item 8 of the provisional agenda*
High-level segment

Illegal trade in wildlife: the environmental, social and economic consequences for sustainable development

Information note by the secretariat

I. Introduction

1. Ecosystems play a crucial role, especially for developing economies, by supporting revenues, future development opportunities, livelihoods and sustainable harvests in agriculture, forestry and fisheries. Ecosystems support tourism, valued at 5 to 10 per cent of national economies, and supply other vital services, such as buffering the effects of extreme weather events, including floods, droughts and cyclones, and ensuring the provision of clean water to cities. Healthy ecosystems provide the platform upon which future food production and economies are ultimately based.

2. However, the opportunities that ecosystems provide for future development are threatened by serious and increasingly sophisticated transnational organized environmental crime, undermining development goals and good governance. Transnational organized environmental crime includes illegal logging, poaching and trafficking in a wide range of animals (including illegal fishing), illegal mining and dumping of toxic waste. It is a rapidly increasing threat to the environment, revenues from natural resources, state security and sustainable development. Estimates from the Organization for Economic Cooperation and Development (OECD), the United Nations Environment Programme (UNEP) and the International Criminal Police Organization (INTERPOL) place the monetary value of transnational organized environmental crime (including illegal logging, fisheries and other wildlife trade, mining and dumping of toxic waste) at between $70 billion and $213 billion annually.[1] This compares to a global official development assistance figure of approximately $127 billion. While benefiting a relatively small criminal fraternity, the illegal trade in wildlife is depriving developing economies of billions of dollars in lost revenue and development opportunities.

3. The illegal trade in wildlife – including terrestrial and aquatic animals, plants and fungi, and their products – is no longer an emerging issue. The scale and nature of the challenge have been recognized in decisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Commission on Crime Prevention and Criminal Justice, the Economic

* UNEP/EA.1/1.

[1] Estimate based on analysis of reports and datasets held by the Organization for Economic Cooperation and Development (OECD), the United Nations Environment Programme (UNEP), the United Nations Office on Drugs and Crime (UNODC) and the International Criminal Police Organization (INTERPOL).

and Social Council, the Security Council, the General Assembly, INTERPOL, the World Customs Organization (WCO) and others, including at the national level. The issue has also been addressed at high-level political conferences, most notably those recently convened in Gaborone and Paris (December 2013), London (February 2014) and Dar es Salaam, United Republic of Tanzania (May 2014). However, the response in terms of impact on the ground is still lagging behind in terms of the scale and development of the threat to wildlife, including forests, and, increasingly, the targets of various development goals.

4. The illegal trade in wildlife is particularly challenging as it involves multiple dimensions, including poverty and governance, and is often hidden within the legal trade. It also commonly involves the mixing of legal and illegal harvesting of resources. Such harvesting is carried out using advanced, deliberate and carefully executed systems of laundering of illegally procured wood, charcoal, bushmeat, fish and other wildlife products. The illegal trade in wildlife can involve complex combinations of illegal practices, including trafficking, forgery, bribery, violence, the use of shell companies, and even the hacking of Government websites to obtain or forge permits. The laundering of illegally sourced wood, fish and other wildlife products in the supply chain is a common practice.

5. Owing to the complexity of the illegal wildlife trade, a diverse response is required in both the short-term and the long-term, and from the local to the international levels. In order to curb the increase in the illegal wildlife trade, responses must involve a range of legal measures, including regulation, legislation and enforcement, environmental management, consumer and demand reduction strategies, and the promotion of alternative livelihood opportunities for those involved. Fully understanding the phenomenon of illegal wildlife trade requires broad insight into the relationship between the environmental resources at stake, their legal and illegal exploitation, loopholes in legislation, the scale and types of crimes committed, and the dynamics of the demand driving the trade. The finance resulting from this illegal trade, known as "threat finance", fuels conflicts and terrorism, and illegal wildlife supply chains are often integral to the generation of such finance.

II. Scale of the crisis

6. The illegal trade in fauna has been estimated by different sources to be worth from $7 billion to $23 billion dollars annually,[2] involving a wide range of species including insects, reptiles, amphibians, fish and mammals. It concerns both live and dead specimens or products thereof, used for pharmaceutical, food, ornamental or traditional medicinal purposes. The illegal harvest and trade at the national and international levels affects a range of taxa such as great apes, elephants, tigers, rhinoceros, Tibetan antelopes, bears, corals, birds, pangolins, reptiles, sturgeon for black caviar, and a wide range of other commercial fisheries species from the high seas and territorial waters. All of these have a significant value on the black market, but an even greater value for national economies if managed sustainably. The illegal trade in wildlife operates by definition outside official government regulation and management, and thus represents a significant economic, environmental and security threat that has received relatively little attention to date.

7. The scale of revenue from the illegal trade in fauna is dwarfed by the income from the illegal trade in flora. The illegal exploitation of and trade in flora, including illegal logging, has been estimated to represent a value of between $30 billion and $100 billion annually or 10–30 per cent of the total value of the global timber trade.[3] An estimated 35–90 per cent of the wood sourced from some tropical countries is suspected to come from illegal sources or has been logged illegally. In addition to the illegal trade in harvested wild plants for ornamental and medicinal purposes, the illegal trade in flora appears to take four main forms: (a) illegal exploitation of high-value endangered wood species, including rosewood and mahogany (many of which are now listed under CITES); (b) illegal logging of timber for sawn wood, building material and furniture; (c) illegal logging and laundering of wood through plantation and agricultural front companies to supply pulp for the paper industry; and (d) illegal logging within and outside protected areas concealed within the largely unregulated woodfuel and charcoal trade, extensive tax evasion and fraud, and supply of fuel through the informal sector.

[2] OECD, "Illegal trade in environmentally sensitive goods", Executive summary, available from www.oecd.org/tad/envtrade/ExecutiveSummaryIllegalTradeEnvSensitiveGoods.pdf; UNODC, 2011, "Transnational organized crime in the fishing industry", available from www.unodc.org/documents/human-trafficking/Issue_Paper_-_TOC_in_the_Fishing_Industry.pdf; UNEP-INTERPOL, 2012, "Green carbon, black trade: illegal logging, tax fraud and laundering in the world's tropical forests", available from www.unep.org/pdf/RRAlogging_english_scr.pdf.

[3] UNEP-INTERPOL, 2012, "Green carbon, black trade: illegal logging, tax fraud and laundering in the world's tropical forests", available from www.unep.org/pdf/RRAlogging_english_scr.pdf.

8. The trafficking and smuggling of endangered CITES-listed wood species such as rosewood and some species of mahogany involve organized crime in both harvesting and in distribution through large trans-oceanic shipments. Most illegally sourced and traded wood is either not considered or not recognized as contraband by customs officials, or is falsely declared as legally sourced and traded wood, or mixed inside paper and pulp. Over 30 different ways of conducting illegal logging and laundering of timber have been identified, including through the use of false documentation, certification, logging permits and bribes, and even the hacking of government websites to obtain transport permits.

9. For pulp and paper production, holding companies in tax havens, shell companies and plantations are actively used to bypass logging moratoriums under the pretext of agricultural or palm-oil investments or alleged plantation development. Such plantations or agricultural developments are never established, or they are declared bankrupt once they have been cleared, resulting in significant loss of revenue to Governments. The perpetrators of such activities make use of legal loopholes for tax avoidance, or simply directly commit illegal tax evasion. Plantations are also used as cover for larger networks of forest logging roads. The road networks are used to funnel illegal timber through plantations, or to ship wood and pulp via legal plantations in order to reclassify pulp or wood as derived from legal production.

10. These methods effectively bypass many current customs efforts related to the Lacey Act and the Forest Law Enforcement, Governance and Trade Programme (FLEGT Programme) which restrict the import of illegal tropical wood to the United States of America and the European Union, respectively. According to data from the statistical office of the European Union, Eurostat, the Food and Agriculture Organization of the United Nations (FAO) and the International Tropical Timber Organization (ITTO), the European Union and the United States import approximately 33.5 million tons of tropical wood in all its forms. It is estimated that 62–86 per cent of all suspected illegal tropical wood entering the European Union and the United States arrives in the form of paper, pulp or wood chips, not as roundwood, sawnwood or furniture products,[4] which have received the most attention in the past. These processed products are often mixed with legal products to hide their origin, providing substantial profits and benefits in terms of competition and depressing the prices and incomes of sustainable industries. Such practices represent a particular challenge to certification schemes and consumer awareness.

III. The particular challenge of the illegal trade in woodfuel and charcoal

11. Official estimates by FAO suggest that just under half of tropical wood consumption in Asia (range 36–98 per cent) and in Latin America (range 8–85 per cent) is used for woodfuel.[5] The remaining half in both regions is divided into sawnwood and pulp for the paper industry and other products. Charcoal and pulp in particular are subject to exploitation by criminals.

12. In Africa, nearly 90 per cent of wood consumed is estimated to be used for woodfuel and charcoal (range 35–95 per cent), with an official charcoal production of 30.6 million tons in 2012, worth between approximately $9.2 billion and $24.5 billion annually.[6] The unregulated charcoal trade alone is estimated to involve a direct loss of revenue for African countries of between $1.5 billion and $3.9 billion annually.[7] In the light of the current trend in urbanization and the projected population increase of another 1.1 billion people in sub-Saharan Africa by 2050, the demand for charcoal is expected to at least triple in the short term. This is expected to lead to severe impacts such as large-scale deforestation, pollution and consequent health problems in slum areas, especially for women. Increased charcoal demand will also rapidly accelerate emissions from both forest loss and short-lived climate pollutants in the form of black carbon. The production of and trade in charcoal represents an important source of income for poor rural producers and an inexpensive energy source for the urban poor resulting in very high demand. Charcoal as a product has a legal status that varies

[4] See http://faostat3.fao.org/faostat-gateway/go/to/home/E; www.itto.int/annual_review_output/?mode=search&id=9; http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home.

[5] Ibid.

[6] http://faostat.fao.org/site/626/default.aspx#ancor; http://faostat.fao.org/site/628/default.aspx.

[7] Figures from FAOSTAT and the World Bank, *Environmental Crisis or Sustainable Development Opportunity: Transforming the charcoal sector in Tanzania*, available from www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2009/09/01/000334955_20090901084035/Rendered/PDF/502070WP0Polic1BOx0342042B01PUBLIC1.pdf.

widely between jurisdictions in and between countries. The charcoal trade ranges from regulated to unregulated, illicit and even illegal, and in some instances charcoal is a currency that fuels conflict.[8]

13. While the official exports from most African countries amount to just a few truckloads annually, the available evidence suggests that far greater numbers of trucks are used to gather bags of charcoal around protected areas at night, including across border points. The analysis of satellite imagery reveals massive illegal logging in many protected areas, including in conflict zones of the Democratic Republic of the Congo, or in north-eastern Madagascar, where vessels are loaded with and export charcoal or timber, including rosewood. Internet listings reveal over 1,900 charcoal dealers in Africa alone, at least 300 of whom officially export minimum orders of 10–20 tons of charcoal per shipment. The actual figures are likely to be many times higher, and minimum daily orders for many individual exporters exceed official total annual exports. For East, Central and West Africa, the net profits from the illegal dealing in and taxing of unregulated, illicit or illegal charcoal is estimated at up to $7.4 billion, which is 2.8 times greater than the street value of illegal drugs traded in the region.[9]

IV. Role of the illegal trade in wildlife in threat finance

14. The illegal trade in wildlife plays a significant role in threat finance, providing funding for organized crime and non-State armed groups including terrorist groups. In some instances, the exploitation of resources is a causal factor driving conflicts, while in others it is an opportunistic by-product of conflict. Whichever the case, it has a serious impact on the natural resources involved, including being the cause of the extinction of a number of local species. As highlighted above, the most important element of the illegal trade in flora and fauna in terms of threat finance is probably charcoal, although other products are also significant.

15. An estimated 15,000 elephants were killed at 42 sites covered by the Monitoring the Illegal Killing of Elephants (MIKE) system in 2012. The size of the forest elephant population is estimated to have declined by around 62 per cent between 2002 and 2011.[10] The number of elephants killed in Africa is in the range of 20,000–25,000 per year out of a total population of 420,000–650,000.[11] Poached African ivory in its raw state may represent an end-user street value in Asia of an estimated $150 million to $188 million per year. This is in addition to ivory from Asian sources. The available evidence, including from the volume of the trade, the large individual shipments and the high value of ivory, point to the involvement of transnational organized criminal networks. Ivory also provides a portion of the income raised by militia groups in the Central African Republic and the Democratic Republic of the Congo, and is probably a primary source of income for the Lord's Resistance Army currently operating in the border triangle of the Central African Republic, the Democratic Republic of the Congo and South Sudan. Similarly, ivory provides a source of income for the Sudanese Janjaweed and other horseback gangs operating between Chad, the Niger and the Sudan. Given the local abundance of elephants and the estimated number of elephants killed within striking range of these militia groups, the likely annual income from ivory for such groups in the whole of eastern, western and central sub-Saharan Africa is probably in the order of $4 million–$12.2 million.

16. With regard to rhinoceros, some 94 per cent of the poaching takes place in South Africa and Zimbabwe, which have by far the largest remaining populations of rhinoceros. The poaching of rhinos has increased dramatically, from possibly less than 50 poached in 2007 to over 1,000 in 2013, involving organized syndicates. The population sizes of black and white rhinoceros was around 4,800 and 20,100, respectively, in 2010, with Asian one-horned rhinoceros numbering around 3,600 individuals. Rhinoceros have disappeared entirely from several Asian and African countries in recent years, although overall numbers of rhinoceros in Africa have been increasing. Rhinoceros horn

[8] UNODC, 2013, Transnational Organized Crime in Eastern Africa: A Threat Assessment, available from www.unodc.org/documents/data-and-analysis/Studies/TOC_East_Africa_2013.pdf.f and UNEP-INTERPOL, 2010, *The Last Stand of the Gorilla: Environmental Crime and Conflict in the Congo Basin*, available from www.unep.org/pdf/GorillaStand_screen.pdf; Security Council, 2002, "Final report of the Panel of Experts on the Illegal Exploitation of Natural Resources and Other Forms of Wealth of the Democratic Republic of the Congo", available from www.pcr.uu.se/digitalAssets/96/96819_congo_20021031.pdf.

[9] UNODC, 2013, *Transnational Organized Crime in Eastern Africa: A Threat Assessment*, available from www.unodc.org/documents/data-and-analysis/Studies/TOC_East_Africa_2013.pdf.

[10] Maisels et al., 2013, "Devastating decline of forest elephants in Central Africa", available from www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0059469.

[11] CITES, 2013, "Status of African elephant populations and levels of illegal killing and the illegal trade in ivory: A report to the African Elephant Summit", December 2013, available from https://cmsdata.iucn.org/downloads/african_elephant_summit_background_document_2013_en.pdf; UNEP, CITES, IUCN, TRAFFIC 2013. *Elephants in the Dust – The African Elephant Crisis*. A Rapid Response Assessment. UNEP, GRID-Arendal.

poached in 2013 has a street value of around $63.8 million to $192 million, but much less for those at the frontline of poaching.

17. The illicit taxing of charcoal – commonly amounting to up to 30 per cent of the value of the goods being traded – is conducted on a regular basis by organized criminals, militias and terrorist groups across Africa. For example, Al Shabaab's primary income appears to be from informal taxation at roadblock checkpoints and ports,[12] and they have been known to make up to between $8 million and $18 million per year from charcoal traffic at a single roadblock in Somalia's Badade District. The export of charcoal from Kismayo and Baraawe ports in particular has increased since the institution of a Security Council charcoal export ban. Al Shabaab retains about one third of the income from that export, which represents between $38 million and $56 million. The overall size of the illicit charcoal export trade from Somalia has been estimated at between $360 million and $384 million per year.[13] Although further investigation is needed into n the role of charcoal in threat finance, for African countries in conflict, including the Central African Republic, the Democratic Republic of the Congo, Mali, Somalia and the Sudan, a conservative estimate suggests that the militia and terrorist groups in the regions may earn, depending on prices, from $111 million to $289 million annually from their involvement in taxing and their control of the illegal or unregulated charcoal trade.

18. The charcoal trade may double or triple in size in the coming decades with rising demand. By having networks and shell companies involved in the trade, militias or terrorist groups can ensure an income independent of the success of their armed campaigns, enabling them to regroup and resurface after apparent military defeat. Unlike the illegal drugs trade, piracy and ransom activities, counterfeit operations and other types of wildlife crime, the unregulated and at times illegal charcoal trade represents a safe and convenient source of income that can be exploited by organized crime and non-State armed groups alike, far beyond their geographic areas of control. The mixing of the illegal and legal trade is symptomatic of many parts of the illegal wildlife trade and requires a particularly coordinated and complex response beyond that of environmental or enforcement agencies in isolation.

V. Responses

19. The illegal trade in wildlife is now widely recognized as a significant threat to the environment and sustainable development. This is reflected in a range of decisions adopted by CITES, the Commission on Crime Prevention and Criminal Justice, INTERPOL and the Security Council, including on the Democratic Republic of the Congo and Somalia.

20. The most important and effective responses to addressing the illegal wildlife trade are those that cause a reduction in consumer demand. Although there have been some successes in demand reduction for illegally traded wildlife products, such responses require behavioural change outcomes, effected through greater awareness and understanding at the consumer end, including about how wildlife is laundered through legal supply chains. Indeed, effective responses in most cases where legal and illegal wildlife trade are mixed are likely to involve a range of measures, such as demand reduction though socioeconomic efforts, certification schemes and consumer awareness, more effective management, good governance and the availability of alternative livelihoods. These need to be coupled with enforcement, including frontline protection, effective customs activities, strengthened legislation, policing and judiciary efforts.

21. To date, enforcement measures to reduce the illegal wildlife trade have been modest. Investigative capacity has been inadequate, and funding for the protection of resources limited. The prosecution of illegal wildlife trade offences and sentencing for such offences often reflect petty crime or minor offences, and are often limited to low-level impoverished criminals at the lower end of the value chain. However, the illegal trade in wildlife often violates tax, anti-money-laundering and anti-corruption laws, and in some instances includes involvement in organized crime, violence, trafficking and funding of non-State armed groups. The consideration of the illegal trade in wildlife in relation to such laws may sometimes provide a far more effective, significant and appropriate entry point for investigation and subsequent evaluation for prosecution.

[12] See S/2013/413.
[13] Ibid.

VI. Successes and progress

22. There is a range of successful recent initiatives in addressing the illegal trade in wildlife developed by the international community as well as individual countries on various continents that can be expanded and built upon. Some significant examples are provided below, but these represent only a small portion of the many ongoing successful initiatives developed by the international community, non-governmental organizations and Governments.

23. Poaching for Shahtoosh wool caused a dramatic drop of some 80 to 90 per cent of the nearly 1 million Tibetan antelopes in China in the 1990s and 2000s. Responses to that poaching included working with local communities to establish reserves and other protected areas, combined with a significant police and military effort to prevent eradication. Improved management and successful awareness-raising campaigns combined with strict enforcement efforts prevented the Tibetan antelope's extinction. Populations of the antelope are slowly recovering, although they are still extremely vulnerable.

24. The deforestation in the Brazilian Amazon reached its lowest level in 2012 since monitoring of the forest began in 1988. Depending on the estimate, the deforestation was reduced by 64 to 76 per cent, primarily as a result of a coordinated enforcement approach using satellite imagery and targeted police operations and investigations. The effort included frontline protection and investigations, as well as prosecutions of ringleaders and networks. While enforcement efforts are likely to have been the primary cause of the observed reduction in illegal logging, it is significant that the campaign is being supported by large-scale efforts through reducing emissions from deforestation and forest degradation in developing countries (REDD) and other initiatives to strengthen the participatory process for indigenous peoples and other stakeholders in order to develop sustainable alternative livelihoods. Combining civilian and State enforcement efforts remains an important challenge and priority in addressing the illegal wildlife trade more broadly.

25. Other important efforts at the supply end of the illegal wildlife trade include strengthening frontline protection, such as the recently initiated and ongoing large-scale training of wildlife rangers in East Africa. In the United Republic of Tanzania in particular, over 1,100 rangers have received specialized training in the past two years. The training course covers the tracking of poachers, tactics and wildlife crime scene management and has resulted in suspects being linked to crime scenes and a series of frontline arrests. The training course is not only improving the rangers' ability to stop and arrest poachers, but also supporting successful prosecutions and good enforcement ethics based on evidence, prosecution and trial in court. Such efforts invest in long-term capacity and do not merely provide short-term enforcement operations. Effective responses to the illegal trade in wildlife should include short-term and long-term good governance and enforcement efforts as well as activities to reduce the incentives of poaching and illegal logging, supported by appropriate legislation as a deterrent, and the development of alternative livelihoods. One-dimensional approaches, whether focused on enforcement or socioeconomic aspects, are unlikely to succeed in isolation.

26. In many areas of Africa, Asia and Latin America, there are still very few rangers on the ground and they often receive very low salaries. Transportation is often lacking to cover thousands of square kilometres of protected areas and rangers are increasingly faced with armed poachers and even militias. Over 1,000 rangers are reported to have been killed in service in recent decades worldwide. In the Virungas in East and Central Africa – home to the world's last remaining mountain gorillas – more than 200 rangers have been killed because of their interference with the illegal charcoal business in the area. Salaries, training and strengthening the presence of frontline rangers all require continuous and focused development support, which in many instances also strengthens the foundations of sustainable wildlife-based tourism. While rapidly deployed implementation of advanced technologies, such as cameras, sensors or aerial unmanned drones, is likely to support such efforts, such technologies are no substitute for well-trained and well-paid rangers, police and customs officers, investigators and judicial collaboration, along with community programmes and available alternative livelihoods.

27. At national borders, the joint United Nations Office on Drugs and Crime (UNODC) and World WCO container control programme has been successful in targeting sea and dry port container shipments in an increasing number of countries, resulting in seizures of illegally traded wildlife, including timber. On 23 and 29 January 2014 for example, two containers holding 3.8 tons of ivory and 266 teak logs were seized in Lomé, leading to multiple arrests.

28. International collaboration, such as that supported by the International Consortium on Combating Wildlife Crime, which includes CITES, UNODC, INTERPOL, the World Bank and WCO, together with increased collaboration among agencies and countries, has created a more effective structure to provide support to countries in the fields of policing, customs, prosecution and the judiciary. Improved sharing of intelligence among agencies has also enabled INTERPOL to support

countries in larger and more effective police operations, leading to larger seizures of illegal timber and wildlife products. In 2013, under Project Leaf of INTERPOL, "Operation Lead" was conducted in Costa Rica and the Bolivarian Republic of Venezuela, resulting in the seizure of 292,000 cubic metres of wood and wood products – equivalent to 19,500 truckloads and worth around $40 million. Also in 2013, the INTERPOL Project Wisdom and Project Leaf in eastern Africa, which involved wildlife enforcement officers, forest authorities, park rangers, police and customs officers from five countries – Mozambique, South Africa, Swaziland, the United Republic of Tanzania and Zimbabwe – resulted in the recovery of 240 kg of ivory and 856 timber logs, and 660 arrests. Also seized were 20 kg of rhinoceros horn, 302 bags of charcoal, 637 firearms and 44 vehicles.

29. With regard to money-laundering and organized crime, following a UNODC training course conducted in collaboration with the Financial Investigative Unit (FIU) of Indonesia and the Indonesian anti-corruption agency, trainers – from the national level in Jakarta to the local level in West Papua province – revealed how anti-money-laundering and anti-corruption regimes can be used to detect, investigate and prosecute illegal logging. After the course, FIU detected highly suspicious transactions, which in turn led to an investigation and prosecution whereby an earlier conviction for illegal logging that had resulted in a two-year prison sentence was overturned and the suspect was sentenced to eight years of imprisonment after being found guilty of money-laundering offences by the High Court of Jayapura, Papua province, on 2 May 2014. That case showed the scale of illegal logging and smuggling.

30. A number of initiatives involving collaboration between UNODC, WCO, CITES, INTERPOL, UNEP and other United Nations entities provide the opportunity for sharing and exchanging vital information, providing support and training to countries affected by the illegal trade in wildlife. These initiatives have yielded important and significant early results. However, the scale and coordination of their activities have been insufficient to keep pace with the growing illegal trade in wildlife. In addition, such enforcement efforts need to be matched with greater emphasis on consumer awareness and demand reduction (building on the growing number of consumer awareness-raising campaigns being initiated by civil society and other stakeholders at the national and international levels), the availability of sustainable alternative livelihoods, and efforts to address corruption.

VII. Conclusions and further considerations

31. Building on existing commitments, the following issues are suggested as priority considerations to further strengthen the ongoing response to the illegal trade in wildlife:

(a) The consequences of the illegal trade in wildlife span environmental, societal (including security) and economic impacts, including affecting the resource base for local communities, and resulting in the theft of natural capital at the national level. The illegal trade in wildlife is therefore a barrier to sustainable development, involving the use of a complex combination of weak environmental governance, unregulated trade, loopholes in legislation and laundering systems to conduct serious transnational crime, undermining government institutions and legitimate business;

(b) The illegal trade in wildlife involves a wide range of flora and fauna, across all continents. The pace, level of sophistication, and globalized nature of the illegal trade in wildlife is beyond the capacity of many countries and individual organizations to address. The illegal trade in wildlife not only constitutes a very significant criminal sector, involving organized crime, violent conflict and terrorism, but it also produces poverty, development and governance challenges. Of particular relevance is the increasing involvement of transnational organized criminal networks in the illegal trade in wildlife, as well as the significant impact on the environment and sustainable development. Current trends suggest that priority attention should be focused on the illegal trade in charcoal and other forest products, including timber and pulp, and the illegal trade derived from various charismatic mammals, especially elephants and rhinoceros;

(c) Responses to the illegal trade in wildlife need to reflect the differentiated and shared characteristics of various supply chains, and recognize that consumer demand remains the most important driver of such trade. The economic, social and environmental impacts of the trade can only be tackled effectively if both the demand and supply elements of the supply chain are targeted, using a combination of elements of deterrence, transparency, legal clarity and enforcement, behavioral change and the development of alternative livelihoods. This will require the engagement of both national and international stakeholders, including from the environmental, enforcement and development sectors and those involved in security and peacekeeping missions;

(d) At the national and regional levels, numerous strong recent commitments have been made in relation to the many aspects of the illegal trade in wildlife. Immediate, decisive and collective action is now required to narrow the gap between these existing commitments, including those made

under the various multilateral environmental agreements and United Nations entities, and their implementation. In particular, strengthened environmental legislation, compliance and awareness, and support to enforcement agencies are required to reduce the role of the illegal wildlife trade (especially in charcoal) in threat finance for the benefit of non-State armed groups and terrorism;

(e) Strengthened enforcement efforts need to be complemented by broader development and awareness-raising efforts. End-user markets need to be further analysed, and consumer awareness-raising campaigns need to be designed, supported and implemented systematically. Civil society and the private sector have a central role to play in such efforts, and also, in some instances, in identifying alternatives to satisfy consumer demand for illegally traded wildlife products;

(f) At the international level, a comprehensive and coordinated United Nations system-wide response to support holistic national approaches in addressing the illegal trade in wildlife is an important component of the global response. Such a response, with additional support from the enforcement sector, would further strengthen coordinated efforts in relation to coherent legislation, environmental law, poverty alleviation and development support, awareness-raising and demand reduction;

(g) Support from the international and bilateral donor community will be essential in recognizing and addressing the illegal trade in wildlife as a serious threat to sustainable development, and supporting national, regional and global efforts for the effective implementation of, compliance with, and enforcement of targeted measures to curb the illegal wildlife trade. In particular, investment is urgently required in demand reduction campaigns, and capacity-building of and technological support to national law enforcement agencies to enable them to further protect key populations of species threatened by illegal trade. Such support must be accompanied by renewed efforts to strengthen broader environmental management for sustainable development.